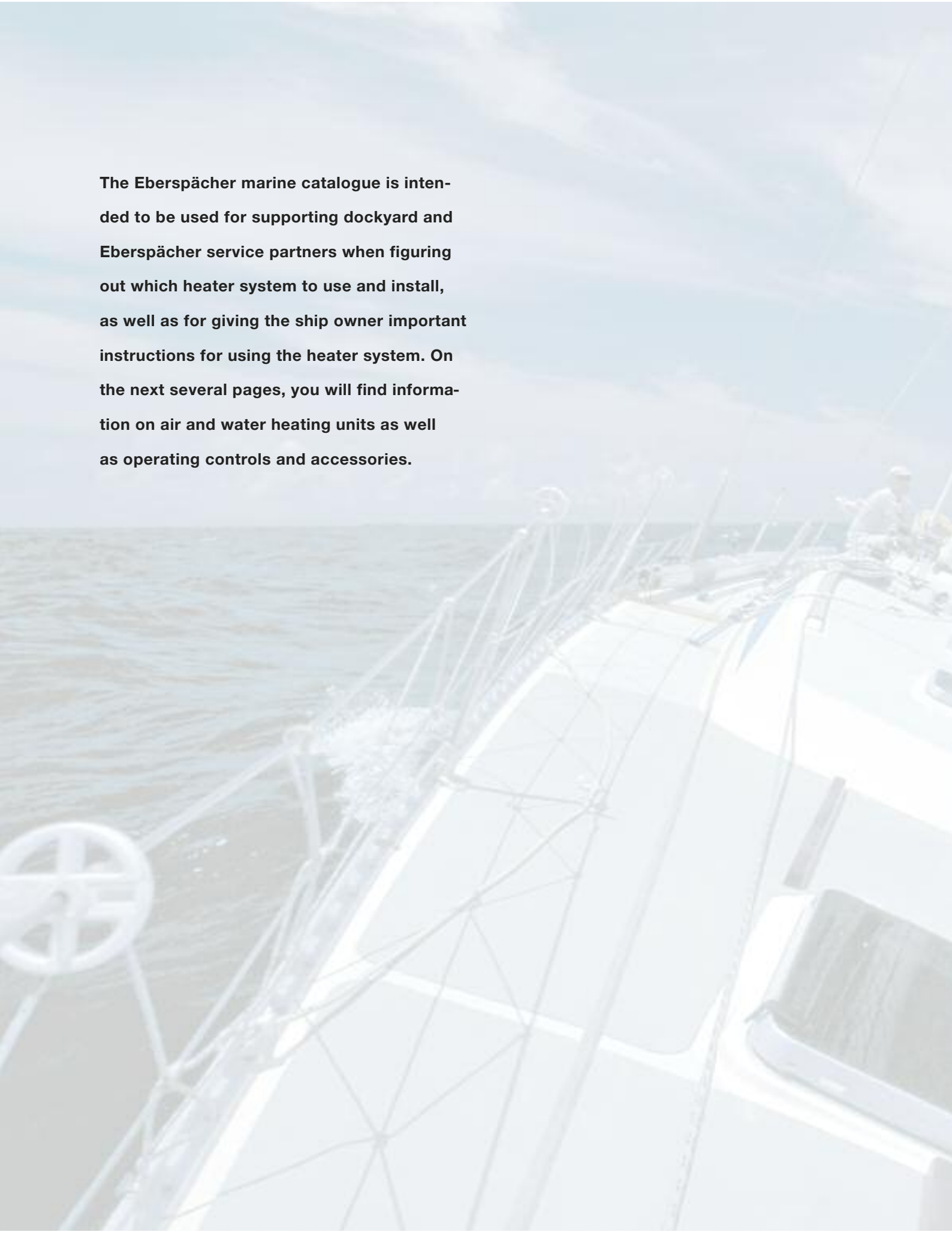
The compass heading is heat.
Eberspächer marine heaters.

Marine catalogue — information, technology, tips.

Eberspächer
A world of comfort



The Eberspächer marine catalogue is intended to be used for supporting dockyard and Eberspächer service partners when figuring out which heater system to use and install, as well as for giving the ship owner important instructions for using the heater system. On the next several pages, you will find information on air and water heating units as well as operating controls and accessories.

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An outstanding choice: Your Eberspächer heater

No matter what kind of engine or other heat sources are being used, Eberspächer heaters create a cosy atmosphere on board. It doesn't matter if you are on a long sailing trip or spending evenings in the harbour – with Eberspächer you will enjoy a high degree of comfort:

- **A pleasantly warm cabin and berth**
- **Dry clothes and equipment**
- **Comfortable air when sleeping**
- **An outstanding mood barometer**

Feeling perfectly comfortable requires perfect coordination

Achieving this level of comfort and coordination requires professional supervision by specially trained, experienced Eberspächer service partners. Talk one-on-one with our consultants to find the optimum heating solution for your yacht. In addition, benefit from the multifaceted range of services and accessories from your Eberspächer partner. Doing this will assure you of comfortable warmth and a sense of well being on board whenever you want.

Bring some first-class comfort on board!

- Eberspächer offers a wide range of air and water heaters for every size of boat for seasonal and year-round use.
- Fuel that is either already available, or is easy to obtain—preferably, safe diesel oil—is used on board.
- The system gets its minimal electrical energy requirements from the on-board electrical system.
- Air heater units can simultaneously heat several rooms at a time by routing heated air through the warm-air ducts.
- Safe and uncomplicated exhaust gas routing, e.g. through the ship's side, the transom or above deck.
- Each air heater unit can be controlled using a thermostat that regulates the heat separately for each room.
- The air heater units can be operated using recirculated or fresh air. We recommend the fresh-air operation in particular. Heating air is drawn in directly from outside or can be pulled in indirectly from ventilated cavities (e.g. forward locker). Pulling the air in this way keeps the air in the cabin constantly renewed and dehumidified.
- In summer, the air heaters can be used just for ventilation.

Answers to your frequently asked questions

What will I actually get for my money?
With an Eberspächer stationary heater, you are getting a premium product that has been painstakingly manufactured according to the highest quality and safety standards.

Can I install the stationary heater myself?
The heater can only be installed by an authorized Eberspächer partner. Otherwise, this constitutes non-compliance with the instructions for installation and the specific directions these instructions include, and invalidates warranty claims on the part of J. Eberspächer GmbH & Co. KG and its partners. Complying with legal guidelines and safety instructions is the prerequisite for warranty and liability claims.

Which system is right for me: water or air?
That depends mainly on the amount of time you will need the heat and how you use it. Air heaters are recommended for retrofitting in boats because a specialist can easily install them and they provide you with heat in a hurry. Air heaters are recommended even in cabins where you sleep because they use so little electricity and you can preselect the temperature for the compartment. Water heaters are the overwhelming choice preferred in shipyards for yacht design. These heaters are integrated into the existing water system and can be used to independently heat water for tap water and for washing, any heaters that are hooked up (central heating) and to preheat the engine.

We've listed a couple of basic criteria below to help you decide. A diesel heater is usually integrated in the design.

How big is the boat and which rooms should be heated?

The general rule of thumb is: 120 – 200 watts of heat is needed per cubic meter of space to be heated (depending on where you are using it and how long you need it). This means that you have the following options with air heaters:

The small heater, the Airtronic D2, is the ideal solution (depending on location) for sailboats up to 8 meters long and motorboats up to 6 meters long. If you need a heater that runs very quietly on board because of where it is installed (e.g. under a seat bench), then we recommend installing the Airtronic D3.

The Airtronic D4 is used for sailing yachts up to 12 meters long and for motorboats up to 10 meters long. 4000 watts of heat flow will keep the saloon area and aft cabin warm at the same time.

The Airtronic D5 and D8LC are available for larger yachts; these heaters will meet any heating needs you may have.

The only exceptions might be: your Eberspächer specialist will have to determine on site which heater you will need for working boats that have to be heated under bitterly cold conditions. Sailboats usually have less interior volume than motorboats. The space to be heated has to be calculated so that the wattage required per cubic meter is used. The answer to this equation tells you which heater you need. For example: Each cubic meter requires 125 watts, therefore, 5000 watts are necessary for 40 m^3. This means you should choose the Airtronic D5. Water heaters need to be chosen in a similar manner.

The total amount of heat from a heat exchanger is usually listed. If you have installed a heat exchanger for your cabin interior whose output is greater than 9 kW, then you need a heater that exceeds this capacity. In this case, you would need the Hydronic M10.

Who will assist me in planning my heater installation?

Our specialist service partners have been specifically trained how to calculate heat requirements and how to select the proper heater(s).

Operation

How do you operate the stationary heater?
Convenient controls are used to operate these heaters. Mini-controllers are primarily used to operate air heaters; timers or remote control units are used for water heaters. Our Calltronic remote control is especially convenient and easy to use—just call in from your cell phone or landline with tone dialling to activate your heater—even at long distance (provided you have network coverage).

How fast do the compartments heat up?
Pre-heating time depends on the outside air temperature, the size of the boat and insulation. Thirty minutes is usually enough to heat up a cabin.

How much fuel does a stationary heater use?
Because they are very efficient, Eberspächer stationary heaters are optimized for high fuel economy. Average fuel consumption depends on several factors, such as the heater, the outside air temperature, your boat's insulation and the size of the compartments that have to be heated. For example, the Hydronic 5 water heater uses only 0,62 l of diesel per hour at its highest setting. But on the other hand, it uses just 0.27 l/h on its lowest setting. Our air heaters, e.g. the Airtronic D4, only need 0.51 l/h at the most to warm up your cabins. After that, it only needs an average of 0.11 l/h.

Can I use gasoline as a fuel, too?
Using gasoline as an exception for gasoline-fired air heaters in boats: Installing gasoline-fired heaters is only allowed as an exception, and then only if the respective local laws allow it. One case might be in boats with gasoline engines where the heater can only get its fuel through the fuel line or from the boat's tank. **But in this situation, you absolutely must comply with the following:** The heater is not allowed to be installed in the engine compartment. The heater is only allowed to be installed in a well-ventilated space that is not connected to the engine compartment or to the tank compartment. And this space must be free of any exhaust. The combustion air and the

heater air must be drawn in from outside at a point you are absolutely sure is free from any possible gasoline fumes and exhaust.

Can I install a diesel heater in a gasoline-powered boat?

It is basically possible to install a diesel heater in a gasoline-powered boat. In this instance, the same rules apply as in the above-stated exception for gasoline-operated heaters.

In addition, the diesel heater must get its fuel from a separate diesel tank that meets code for all the generally applicable, local regulations regarding diesel tanks in boats.

Does a stationary heater need AC mains power (230 V)?

No. The current needed to run the heater's electrical components is taken from the battery. Heat is created by combusting the fuel.

Safety

Does a stationary heater make noise?

Well, by their very nature of course all stationary heaters make combustion noises when they are operating. But they are so minimal that our stationary heaters are approved for day and night operation. For boat installation in particular, if required, a wide range of measures is available for minimizing noise.

Does running a stationary heater create any fumes?

In extremely rare instances, the start-and-stop phase may produce a minimal amount of fumes or odours. This is just as normal as water vapour occurring when the outside temperature is low.

Which regulations do I have to follow when operating a heater?

Legal Regulations

Legal guidelines vary from region to region in terms of governing the design, installation and operation of heaters in boats. Before a heater is installed, you must first check which laws must be complied with as they pertain to the particular area of operation on your boat. Various testing organisations will check and monitor compliance with the legal regulations.

Regional differences

Following are examples of regional laws and regulations for heaters in boats.

- In Bavaria, Sweden and the UK (Great Britain and Northern Ireland): gasoline-powered heaters are not allowed as built-in components in new-boat construction.
- Sweden: the combustion air must be pulled in from outside the boat.

CE certification

Since June 16, 1998, every newly manufactured sports boat between 2.5m and 24m long—including its system components—has to meet the CE identification requirements. For heater installation, this means the following:

- That the heater is labelled with CE identification
- That the fuel supply in the engine compartment must only be routed through metal or fire-resistant hoses, in accordance with DIN EN ISO 7850.

Heater permit

The following permits exist for heaters, and the inspection certification appears on the nameplate of the plant that manufactured the heater:

- CE certification with the CE identification label.
- A permit from the TÜV southern Germany for the following heaters for operation on Bavarian waters: (No identification on the factory name plate) Airtronic D2, Airtronic D4

How long is the warranty on new heaters?

Eberspächer warrants all its products for 24 months.

Does a stationary heater need special service?

No. Our products are maintenance-free. But, just like an AC system, it should be switched on briefly once a month. Ten minutes is enough.

Important installation and safety information

Using the heater

The heater may only be used and operated for the specified purposes for which it is manufactured, and in accordance with the “Technical Description” that accompanies each heater.

Risk of injury, fire and poisoning!

- The heater may only be operated with an outlet hood installed.
- Disconnect the battery before starting any work.
- Before starting any work on the heater, turn the heater off and let all hot components cool off.
- The heater may not be operated in any enclosed areas, e.g. dockyard.
- Hot-air outlets that can be adjusted must always be aimed in such a way that any living beings (people, animals) and any objects (attached or unattached) that can be affected by heat are not placed directly in the path of hot air.
- The year the heater is first operated must be marked on the factory nameplate.
- An air heater’s heat exchanger is a component subjected to a high degree of stress, it has to be replaced ten years after the heater was initially put into operation. In addition, the date of installation must be entered on the “original replacement part” label, which is included with the heat exchanger. This label must then be glued in place next to the manufacturer’s nameplate.
- The heater may only be installed, or, in cases of repair or warranty claims, repaired, by a manufacturer-authorized Eberspächer service partner, and this must be carried out in accordance with the specifications listed in this document and the Technical Description.
- Repairs carried out by a non-authorized third party are hazardous and therefore not permitted; if this does occur, the heater’s type approval documentation and the one for the boat will be rendered invalid.
- Only OEM accessories and replacement parts are allowed to be used for carrying out installation or repair work.

The following actions are not permitted

- Changing or altering heater-related components.
- Use of non-OEM parts not approved by Eberspächer GmbH & Co. KG.
- Deviations from legal, safety and/or function-related guidelines during installation or operation, which are given in the installation and/or operating instructions. This especially applies to electrical wiring, the fuel supply, combustion and exhaust air routing.
- Only those control devices approved by Eberspächer GmbH & Co. KG may be used for operating heaters. Using other control devices can cause malfunctions.
- The heater may not be operated in any area where inflammable vapours, fumes or dust can form—e.g. near a fuel depot, coal yard, lumberyard or granary, or similar.
- The space where the heater is installed must not be a storage area and must remain clear, unless it has been installed in a protective case, or similar.

- In particular, reserve fuel canisters, oil cans, spray cans, gas cartridges, fire extinguishers, cleaning rags, articles of clothing, paper, etc. must not be stored or transported on or next to the heater.
- The heater must be turned off before refuelling.
- Defective fuses may only be replaced with fuses bearing the specified fuse rating.
- If any fuel leaks out of the heater's fuel system (leakage), have any damage repaired immediately at an Eberspächer service partner (and do not operate the heater until it is repaired).
- The heater's delayed off must not be cancelled prematurely, e.g. by actuating the battery cut-off switch, except in an emergency.

Emergency cut-off — EMERGENCY/OFF

The following must be done in the event of an emergency cut-off — EMERGENCY/OFF — while operating the heater:

- Pull fuse or
- Disconnect the heater from the battery (actuate the battery cut-off switch)

Performing an emergency cut-off might damage the heater.

Accident Prevention

All general accident-prevention regulations and the appropriate repair shop and industrial safety instructions are to be followed.

The environment

Certification

The high quality of Eberspächer products is the key to our success. In order to ensure this quality, we have organized all of the work processes in our company in terms of quality management (QA). Nevertheless, we engage in a wide range of activities in order to improve our product quality, and in order to keep pace with ever-increasing customer demands. The type of guarantee of quality required is defined in international standards. This quality should be viewed in a far-reaching sense because it applies to products, work-production sequences and customer-supplier relationships. Officially approved experts evaluate the system and the appropriate certifying body awards the certificate.
Eberspächer has already qualified for the following standards:
Quality management in accordance with **DIN EN ISO 9001:2000 and ISO/TS 16949:1999**
Environmental management system accordance with **DIN EN ISO 14001:1996**

Waste disposal management

Disposing of materials

Old equipment, defective components and packing material can be correctly sorted separately, so that if necessary, all parts can be disposed of in an environmentally friendly manner, or taken for recycling. Electric motors, control devices and sensors (e.g. temperature sensors) qualify in this sense as “electrical-scrap.”

Dismantling the heater

Dismantling the heater is done in accordance with the repair steps from current troubleshooting and the repair manual.

The right air heater for every need

Skippers are individualists—and every boat has its own special quirks and characteristics that an Eberspächer marine heater needs to cope with: smaller boats require different solutions than 20-meter yachts. The question whether your boat is a sailboat or a motorboat plays an important part, too.

And your selection from the Eberspächer line of products is just as great. With heater outputs of 850 to 8,000 W for spaces up to 70m3, you will definitely find what you want. Stop by and talk it over with your boating specialist. He will be glad to help you put together your own installation quote.

Technical data

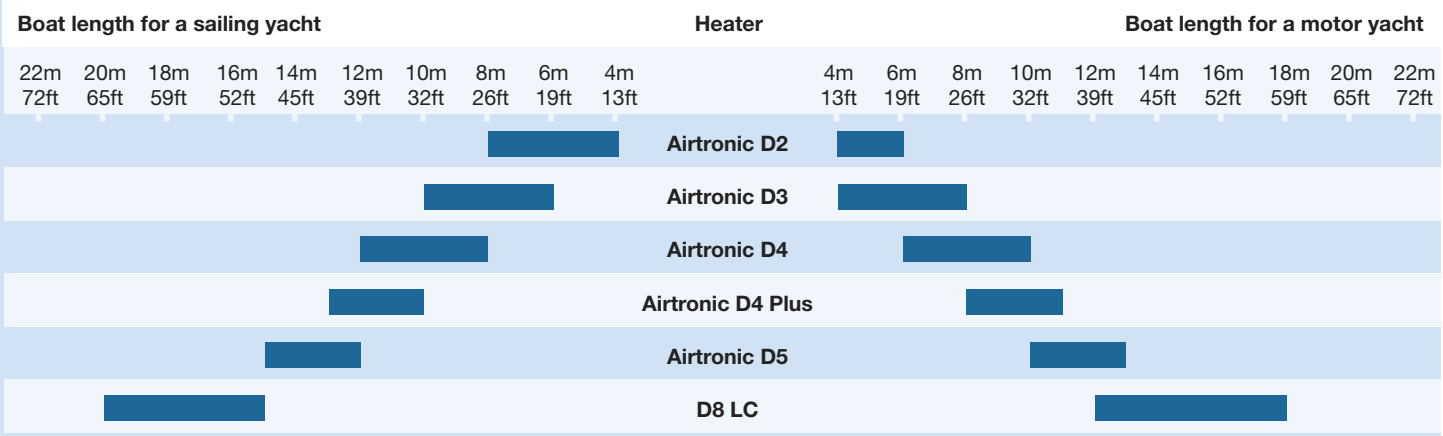
Diesel version	**Airtronic D2**	**Airtronic D3**	**Airtronic D4**	**Airtronic D4 Plus**
Voltage (volts)	12 / 24	12	12 / 24	12 / 24
Heat output (watts)	850 / 1,200 / 1,800 / 2,200	900 / 1,600 / 2,200 / 3,000	900 / 2,000 / 3,000 / 4,000	900 / 2,000 / 3,000 / 4,000
Air throughput (m^3/h)	36 / 52 / 75 / 90	52 / 80 / 100 / 130	55 / 95 / 130 / 160	45 / 86 / 120 / 160
Electrical output operation (watts)	8 / 12 / 22 / 34	7 / 10 / 16 / 24	7 / 13 / 24 / 40	7 / 16 / 30 / 55
Fuel consumption (l/h)	0.10 / 0.15 / 0.23 / 0.28	0.11 / 0.20 / 0.28 / 0.38	0.11 / 0.25 / 0.38 / 0.51	0.11 / 0.25 / 0.38 / 0.51
Dimensions L x W x H (mm)	310 x 115 x 122	376 x 140 x 150	376 x 140 x 150	376 x 140 x 150
Weight (kg)	2.7	4.5	4.5	4.5

Superb performance in any size

Eberspächer heaters can be retrofitted to your boat quickly and easily. So it's never too late to indulge yourself and your crew in a real plus in comfort!

Take a good look at our broad range of products and the many different ways you can use them. And then let our competent experts handle the installation.

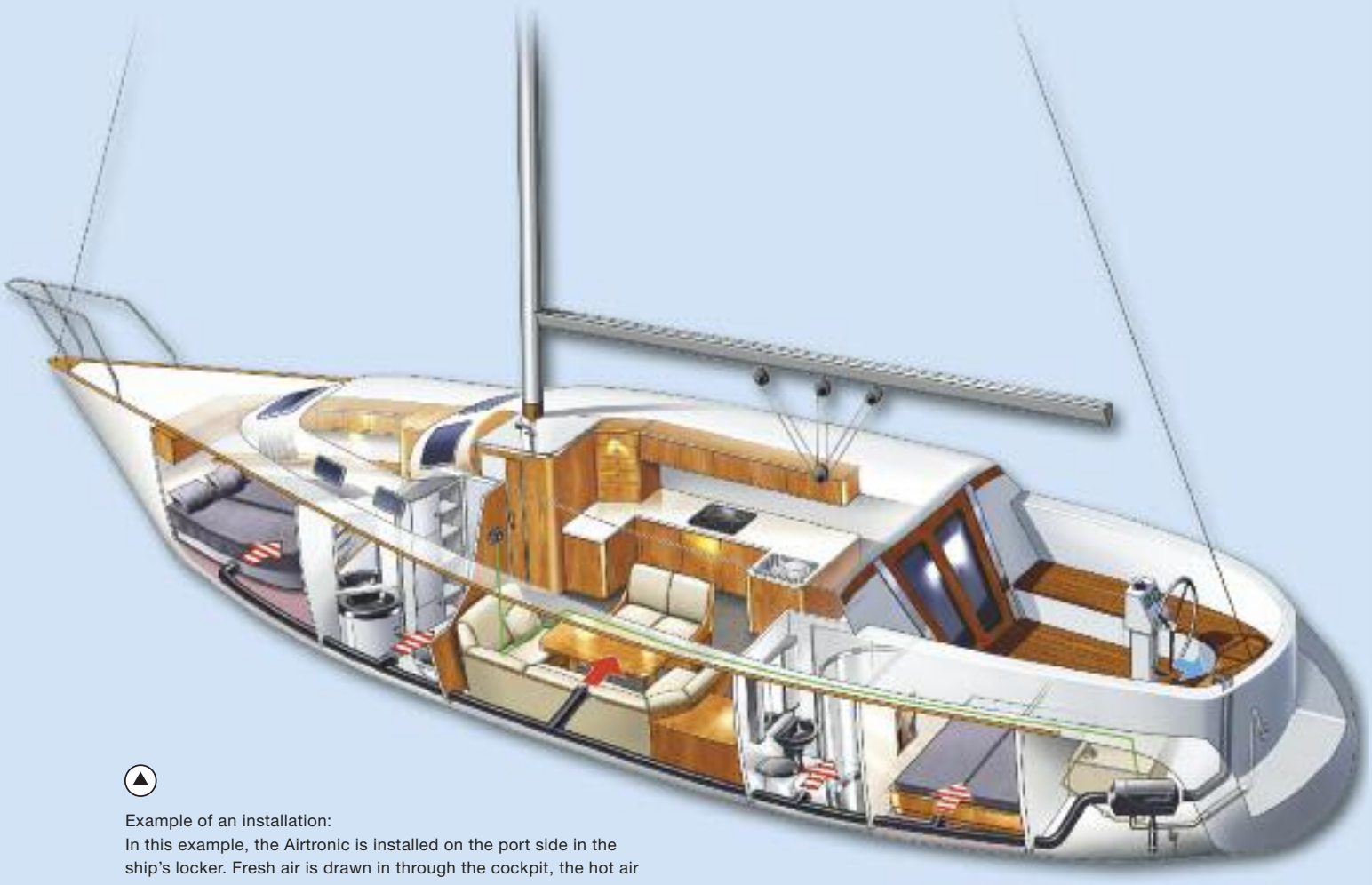
Selection guide



Airtronic D5	D8 LC
12 / 24	12 / 24
1,600 / 2,700 / 4,800 / 5,500	3.500 / 8.000
130 / 160 / 210 / 233	250
25 / 35 / 80 / 85	115
0.20 / 0.34 / 0.58 / 0.66	0.4 / 1
530 x 170 x 185	653 x 260 x 250
9.3	14

The benefits of Eberspächer heaters:

- Power stage for rapid, direct heating
- Continuously variable temperature preselection
- Suitable for fresh-air operation
- Nearly silent operation
- Can be used purely for ventilation on warm days
- Great value for your money in terms of cost and maintenance
- Minimal assembly required—ideal for a retrofit installation
- Maintenance free and user friendly
- Energy efficient



Example of an installation:
In this example, the Airtronic is installed on the port side in the ship's locker. Fresh air is drawn in through the cockpit, the hot air outlet is located next to the companionway, and the exhaust line exits at the stern of the boat in the transom.

System accessories for your complete, customized solutions:

Eberspächer offers a wide range of premium accessories that are coordinated to complement each other, and that will meet all the particular requirements for use on smaller boats and sea-going yachts. You will find all of these parts in the marine catalogue starting on page 54.

Controls

Airtronic mini-controller, room temperature sensor

- For controlling the room temperature
- Includes an integrated ventilation/heating selector switch

EasyStart T Timer

- For installation in the interior
- Innovative, intuitive prompts using the menu bar
- 3 heater start times within a seven-day period that can be programmed

EasyStart R remote-control operation

- Base model, can be combined with the EasyStart T or mini-controller
- Includes confirmation of heater operation

EasyStart R+ remote-control operation

- Comfort version
- All functions, including the EasyStart T
- Includes confirmation of heater operation

Telephone remote-control Calltronic*

*An additional control device (the Airtronic minicontroller or the EasyStart T) for preselecting temperature is required for operation with air heaters.

Hot air system and parts Component rating

General instructions on the heater air system and the parts Component rating

Parts for conducting heat can also be installed on the heater. Each part has a parts Component rating, which reduces the heated air output. To give you the opportunity to check whether the installation you are planning will not restrict hot air throughput improperly, we have defined an equipment Component rating for every heater, and a part Component rating for all of the parts that carry hot air. Refer to the specifications in the parts
ID tables:
0 = No increase in temperature,
– = No part Component rating.

General rule of thumb:

Twice the cross-section, or two identical parts in parallel = 1/4 of the Component rating.

Example:

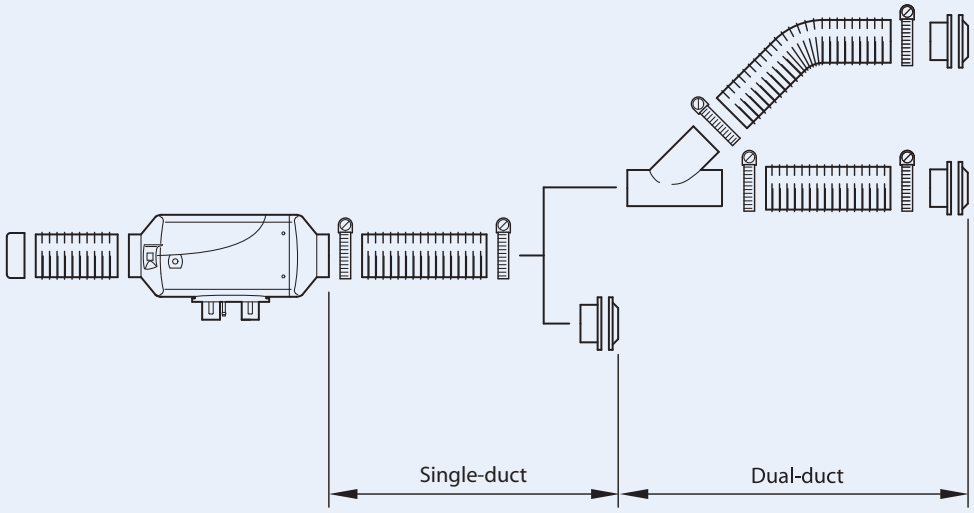
Hose ø 50,
A = 19.6 cm^2, Component rating 1.0

Hose ø 75,
A = 44.2 cm^2, Component rating 0.25

The total of the part Component rating, of the parts conducting hot air that are connected to the unit cannot be greater than the heater Component rating, since otherwise the outlet temperature will be too high and will activate the overheating sensor. If the sum of the part Component rating is greater than the heater's Component rating, then selecting a larger diameter for the parts hot air will reduce this total.

The Component rating for smooth, welded pipes is half
that for flexible pipes of the same diameter
(i.e. twice the pipe length).

Schematic for the single-duct and dual-duct hot air routing



Please note!

Single duct means:
A duct goes either to or from the heater. The part Component rating listed under "single duct" apply.

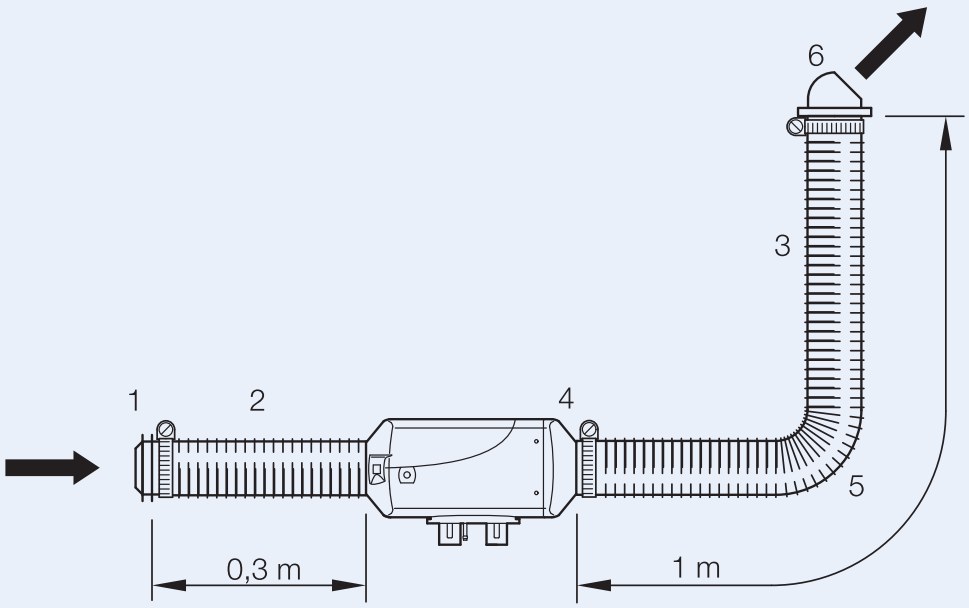
Dual duct means:
The hot-air pipe branches into two ducts after the heater. Part Component rating listed under "single duct" apply before the branch, and the part Component rating listed under "dual duct" apply after the branch.

Pay particular attention to the instructions regarding air routingand determining the sum of part Component rating starting on page 26.

When using dual-duct hot air routing, at least one duct must be configured so that it cannot be blocked off.

The leg that can be closed off must not be taken into account when figuring out the sum of the part Component rating.

Example for calculating hot air routing:
Airtronic D2 Ø 60 mm hose diameter unit number 6



No.	Name	Part Component rating
1	Protective grille and connector ø 60 mm	1.7
2	Flexible tube ø 60 mm, 0.3 m long	0.3
3	Flexible tube ø 60 mm, 1 m long	1,0
4	Hood straight ø 60 mm	0
5	90° bend flexible tube ø 60 mm	1.2
6	Rotatable vent	1.4
	Sum of part Component rating	**5.6**

The sum of the part Component rating = 5.6 and does not exceed the unit Component rating of 6; installation is permitted

Installation location

Installation location

You don't need to sacrifice any cabin space to install these heaters because the units can be housed in any space that is well ventilated to the outside, e.g. in the boat's locker, the ship's hold and storage space.

If ventilation permits, installing the heater in the engine compartment is an option with inboard diesel engines, but this is not true for gasoline-powered boats.

All heaters are installed in a normal position and parallel to the boat's longitudinal axis.

If the heater will be operated primarily when the boat is moored, or on a motor yacht, then it is permissible to install the unit perpendicular to the boat's longitudinal axis.
You must follow the specified deviations when operating the heater this way, too.

Please note!

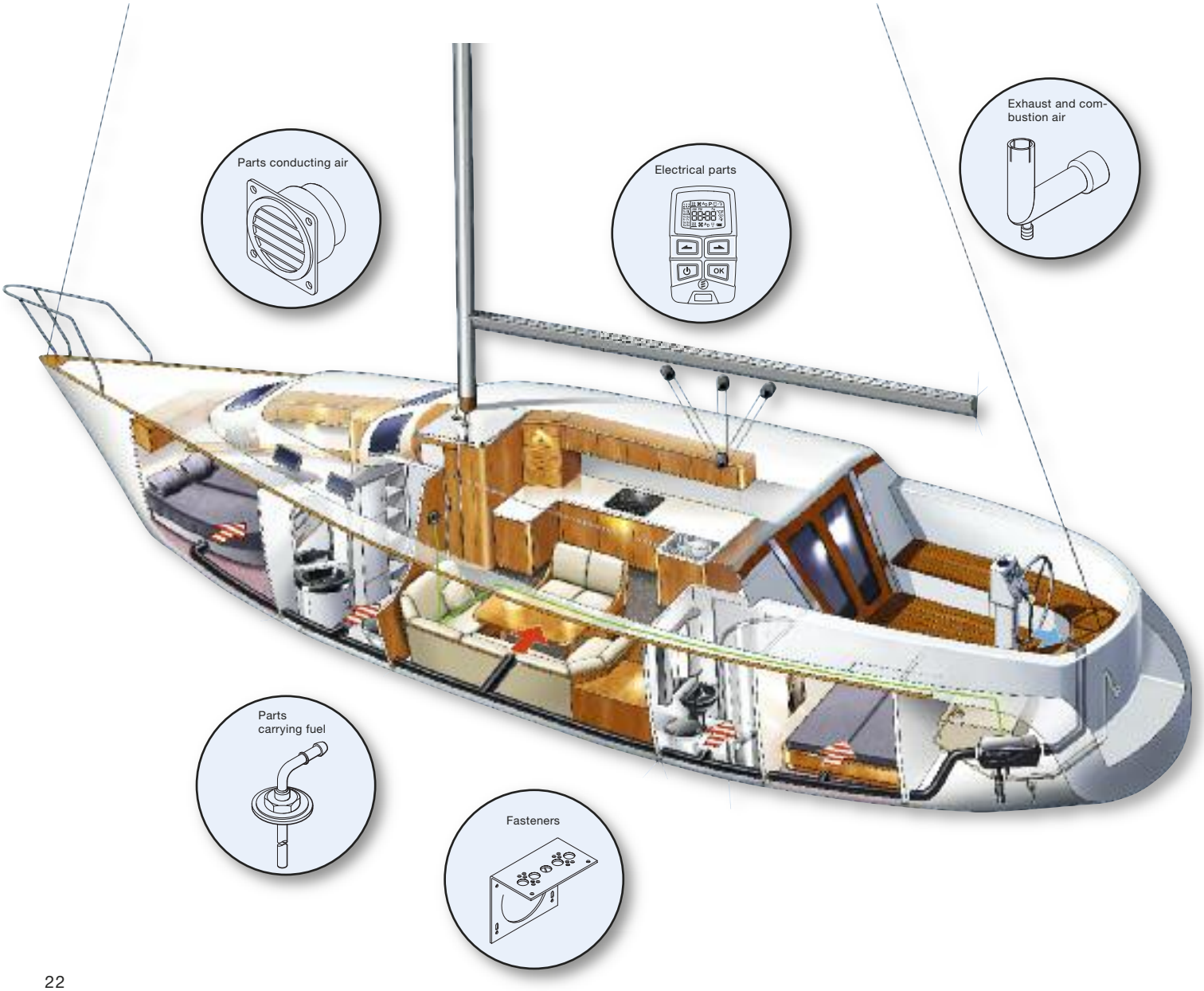
If installing the heater in the engine compartment, metal fuel lines or fire-retardant hoses (in accordance with DIN EN ISO 7840) must be used.

When the boat heels, bilge water must not wash over the heater unit.

Make sure that the connection to the boat's hull is not rigid when installing the heater unit. This will prevent transmitting sound and vibration from the heater.

Insulating or flammable objects should be stored at least one meter away from the heater unit.

Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.



Combustion air system

Combustion air must be drawn from a well-ventilated area at atmospheric pressure (not from the cabin).

There are two options for routing the combustion air system:

If analogous regulations exist in Sweden, then the combustion air must be drawn in from outside the boat.
To draw air in this way, an additional plastic is available for the opening in the boat's hull.
The opening for drawing in combustion air must be located where it will not pull in any exhaust (from the heater unit or the engine).
The line from the heater unit must be laid so it runs downward. A condensate opening must be connected at the lowest point for routing that does not slope.
The combustion air hose must be routed at the end as a gooseneck. This lets any water that gets in drain out again.
If no pertinent regulations exist to the contrary, the combustion air can also be drawn from a stowage area or from the engine compartment.

Please note!

- When drawing combustion air from the engine compartment, make very sure that it is adequately ventilated and that the atmospheric pressure does not change while the engine is running (e.g. due to the cooling fan running).

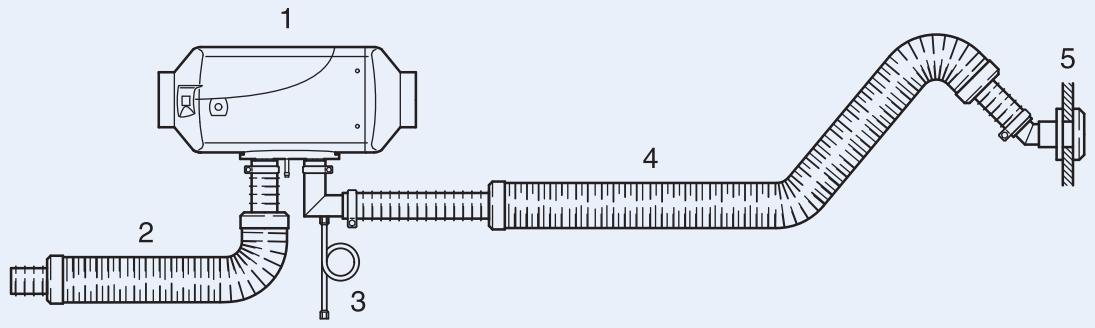
Exhaust gas routing

In sailboats, the exhaust gas routing is taken to the transom, and in motorboats to the side hull. The exhaust gas routing must be insulated so that the surface temperature does not exceed 80° C.
Routing the exhaust gas through a cabin can only be done through a pipe made of stainless steel.
Outside the cabin, a flexible exhaust pipe of double-layer stainless steel can be used.
Preferably, the exhaust line should always be installed so that it always runs downward, so that condensate or surge water can drain away immediately.
If a particular installation situation is awkward, a T-fitting that includes a condensate line can be used at the lowest point in the exhaust gas routing.
The flexible exhaust pipe has to be routed at the end as a gooseneck so that any water getting in can run out again.
We highly recommend using a muffler to deaden the sound of the exhaust.

Please note!

- When laying the exhaust lines, make absolutely sure that all of the connections are tightly sealed. The gaskets in the boat hull's opening must fit exactly. Make sure that no hot metal parts touch the boat's hull when the exhaust gas routing is being laid and the opening in the boat hull is being installed. Minimum distance from the hull of 20 mm must absolutely be maintained with an insulated exhaust line.

Example of combustion air routing and exhaust gas routing

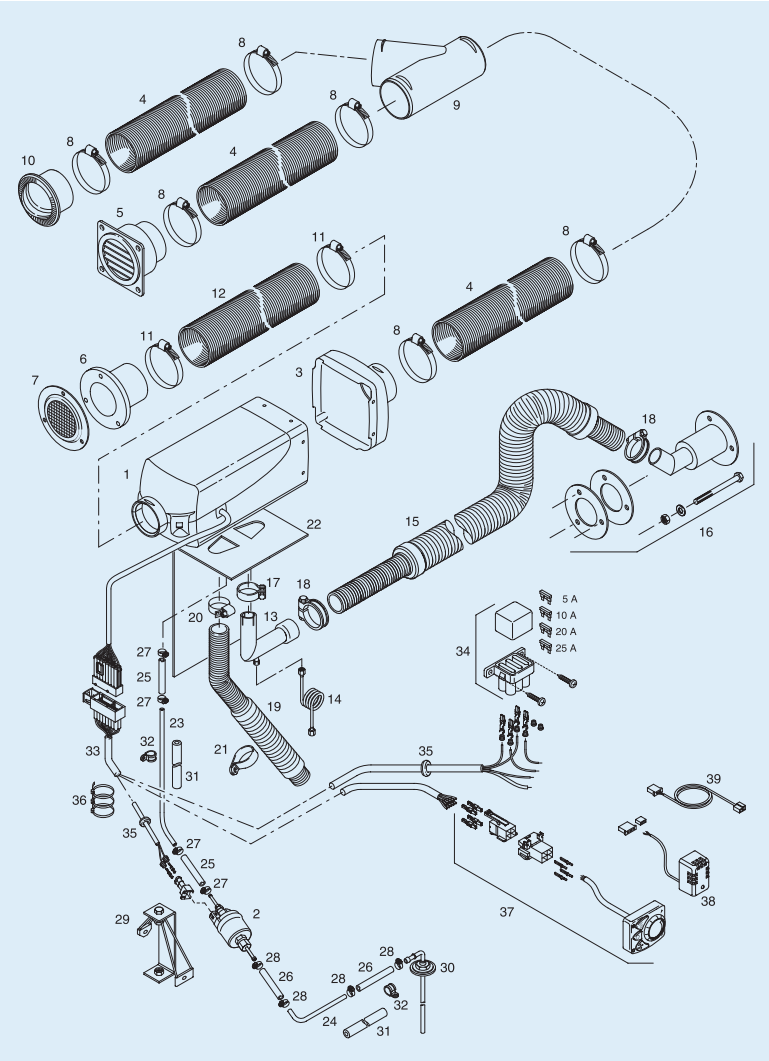


1	Heater
2	Muffler – combustion air
3	Condensate drain
4	Muffler – exhaust
5	Opening in boat hull for the exhaust pipe

Technical data

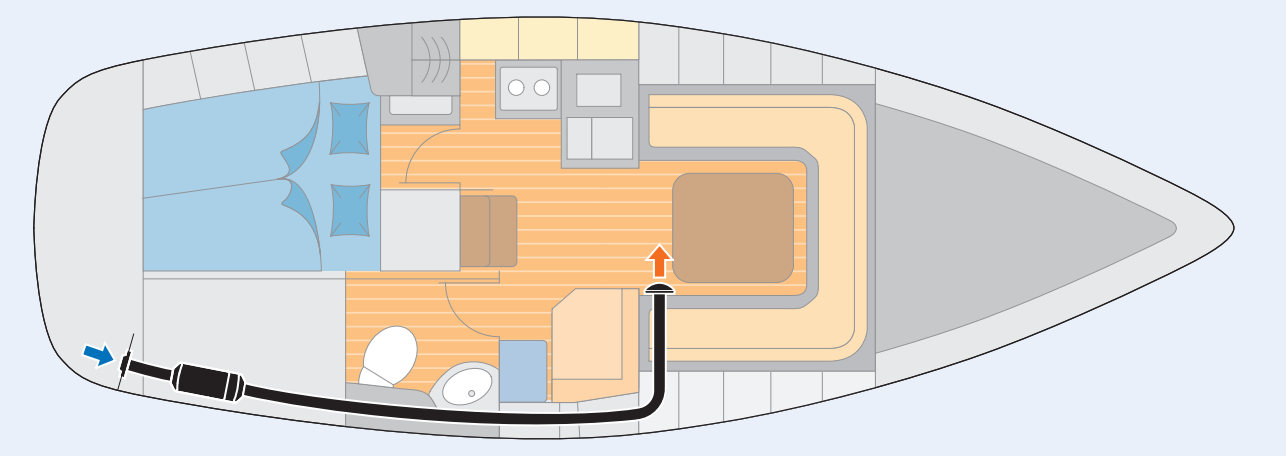
		Airtronic D2			
Voltage	**V**	12/24			
Heating levels for heat flow	**W**	Power 2,200	Large 1,800	Medium 1,200	Small 850
Air throughput	**m³/h**	90	75	52	36
Electrical power consumption	**W**	34	22	12	8
Fuel consumption	**l/h**	0.28	0.23	0.15	0.10
Dimensions LxWxH	**mm**	310x115x122			
Weight	**kg**	2.7			

Parts required for installation

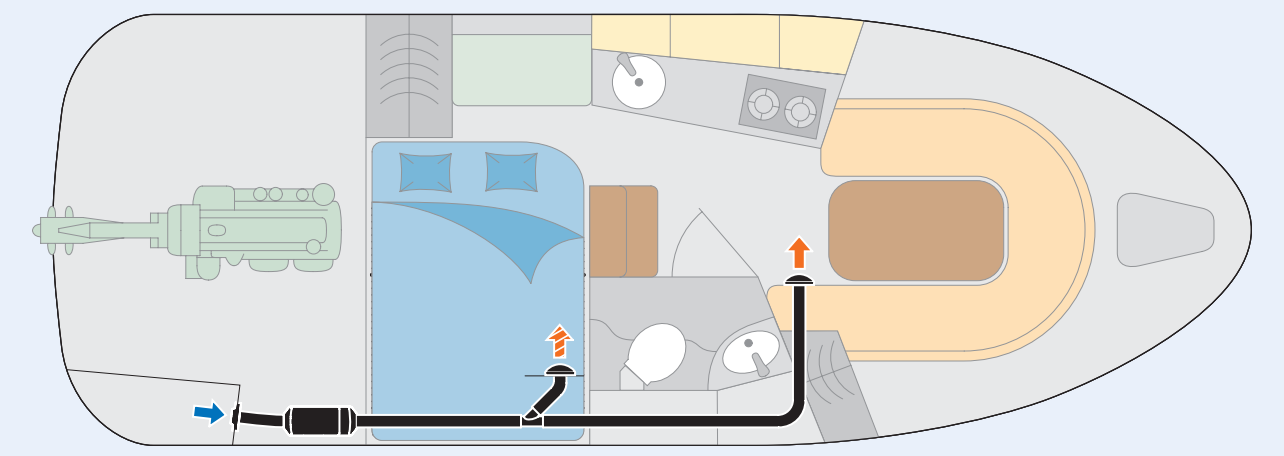


1	Airtronic D2
2	Metering pump
3	Hood, Ø 75
4	Flexible tube, Ø 75
5	Outlet, Ø 75
6	Hose fitting, Ø 60
7	Grille
8	Hose clamp, Ø 70 - 90, (6x)
9	Y-branch, Ø 75
10	Round nozzle, closable
11	Hose clamp, Ø 50 - 70, (2x)
12	Flexible tube, Ø 60
13	90°angle exhaust pipe with run-off, Ø 24/30
14	Condensate drainage
15	Exhaust muffler
16	Opening in the boat hull
17	Pipe clamp
18	Pipe clamp, (2x)
19	Muffler, combustion air
20	Hose clamp, Ø 20/32
21	Hose clamp, Ø 50
22	Bracket, heater
23	Pipe, Ø 4 x 1.25, 7.5m long
24	Pipe, Ø 6 x 2, 1.5m long
25	Hose, Ø 3.5 x 3, running meter
26	Hose, Ø 5 x 3, running meter
27	Hose fitting, Ø 9 (4x)
28	Hose fitting, Ø 11 (4x)
29	Bracket metering pump
30	Fuel tank connection
31	Foam rubber hose (Sound Insulation)
32	Pipe clamp, Ø 10, (2x)
33	Wire harness
34	Fuse holder, triple
35	Bushing, (2x)
36	Cable tie, 200 mm long, (10x)
37	Mini-controller
38	Temperature sensor
39	Wire harness, temperature sensor

	Item parts list	Order numbers starting on page
Heater scope of delivery		
Airtronic D2 heater Metering pump	1-2	
The following must also be ordered:	3-12	54
Parts conducting air	13-21	98
Parts conducting exhaust and combustion air	22-29	114
Fasteners	23-32	106
Parts carrying fuel	33-36	
Electrical parts	37-39	
Controls and accessories		



In sailboats, the heater is usually installed in the ship’s locker. The combustion air is drawn in from the locker and the exhaust gases are fed to the outside through the transom. In boats, the fresh air is always drawn in from outside. The Airtronic's heat exchanger heats up the air that has been drawn in and it is fed through a hose system to heat the saloon area, the cabins and the galley.



The ideal scenario for motorboats is to install the heater in the engine compartment. The combustion air is drawn in from the engine compartment and the exhaust gases are fed to the outside through the transom. Here, too, the fresh air is always drawn in from outside. The heater’s heat exchanger heats up the air that has been drawn in and it is fed through a hose system to heat the saloon area, the cabins and the galley.

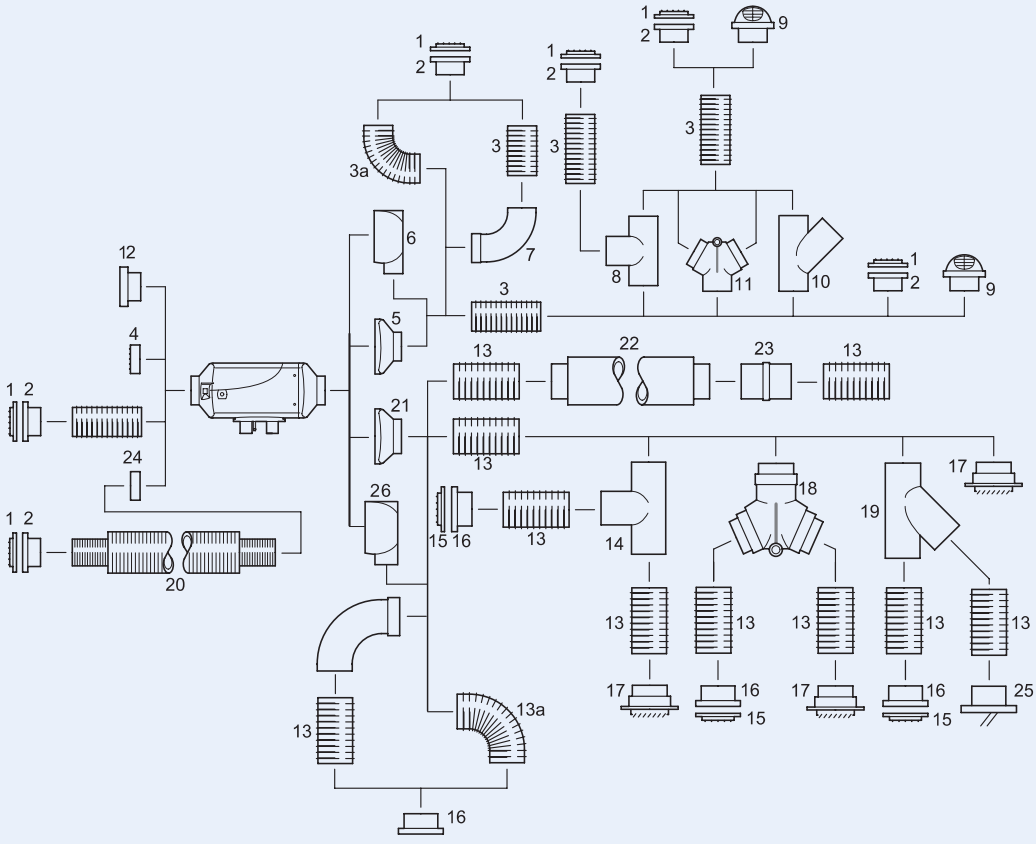
Parts for air routing

Unit Component rating for the heater
- If the air vent hood = ø 60 mm, then the heater unit Component rating = 6.
- If the air vent hood = ø 75 mm, then the heater unit Component rating = 12.

This diagram shows how the most important parts are used for routing the air in a single-duct heater system or in a dual-duct heater system.

Single-duct heater means:
A hot-air duct goes either to or from the heater. The part Component rating listed under “single duct” apply.

Dual-duct heater means:
The hot-air duct branches into two ducts after the heater. Parts Component rating listed under “single duct” apply from the heater to the branch, and starting right after the Y-branch, the part Component rating listed under “dual duct” apply.



Please note!

- Using an air vent that can be closed off is only possible with a dual-duct heater system, and with this option, one hot-air duct must remain permanently open (i.e. cannot be closed off). The hot-air duct that can be closed off must not be taken into account when figuring out the sum of the part Component rating.
- Follow the instructions for routing the air starting on page 20.
- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter.
  The Technical Description is included with every heater unit.
- Do not use the diagram above as an example for installation.

Part Component rating for parts that conduct air

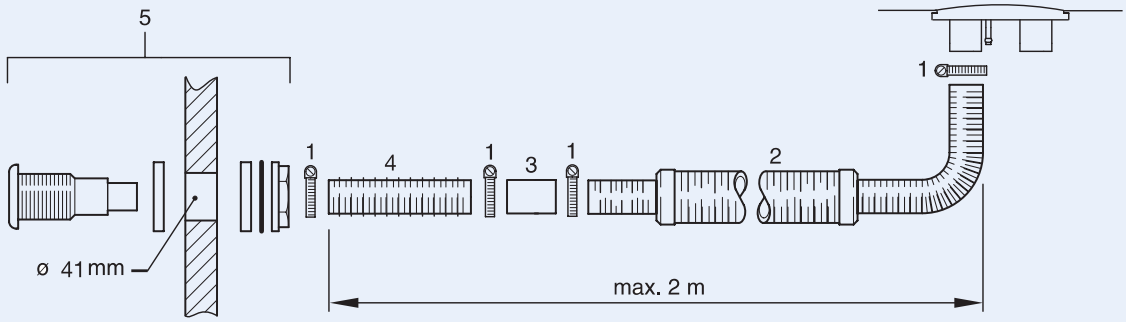
Part Component rating for the heater with air vent hood ø 60 mm – unit Component rating for the heater = 6

No.	Name	Part Component rating Single duct	Dual duct
1 2	Grille with Hose fitting	1.7	0.6
3	Flexible tube ø 60 mm, per m	1	0.3
3a	Flexible tube with 90° bend ø 60 mm	1.2	0.8
4	Grille ø 60 mm	0	–
5	Hood ø 60 mm	0	–
6	Swiveling hood ø 60 mm	4.5	–
7	Elbow pipe ø 60 mm, 90°	4.1	0
8	T-branch	–	0.6
9	Rotatable ventair vent	1.4	0
10	Y-branch	–	0.3
11	Control flap ø 60 mm Flap position – centre Flap position – right/left	 – –	 0 1
12	Air filter	3	-

Part Component rating for the heater with air vent hood ø 75 mm – unit Component rating for the heater = 12

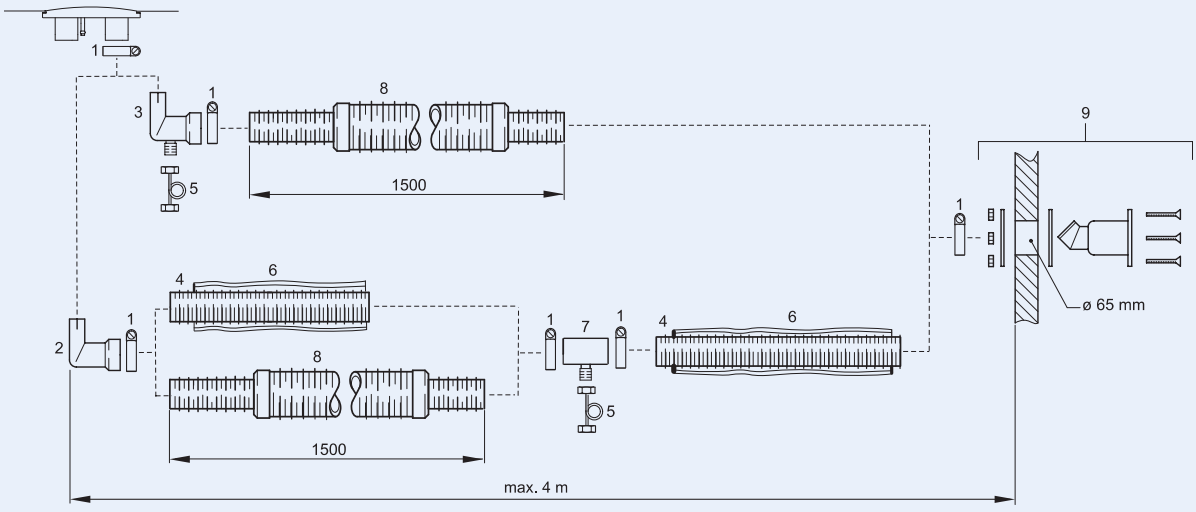
No.	Name	Part Component rating Single duct	Dual duct
13	Flexible tube ø 75 mm, each m	1	0.3
13a	Flexible tube with 90°- bend ø 75 mm	1.2	0.5
14	T-branch	–	0.8
15	Grille ø 75 mm	–	–
16	Hose fitting ø 75 mm, metal	0.5	0
17	Rotatable vent	0.4	0
18	Control flap ø 75 mm Flap position – centre Flap position – right/left	 – –	 0.4 1.5
19	Y-piece ø 75 mm	–	0.4
20	Intake silencer ø 75 mm	0.5	-
21	Hood ø 75 mm	0	0
22	Silencer ø 75 mm	1	–
23	Hose connection fitting ø 75 mm	0.1	–
24	Ring ø 60/75 mm	0	–
25	Round nozzle ø 75 mm closeable	-	-
26	Swiveling hood ø 75 mm	6	-
27	Elbow pipe ø 75	3	0.8

Parts for routing combustion air



No.	Name
1	Hose clamp
2	Silencer for front left
3	Hose connecting pipe ø 25 mm
4	Flexible tube ø 25 mm
5	Boat hull opening for front left

Parts for routing the exhaust



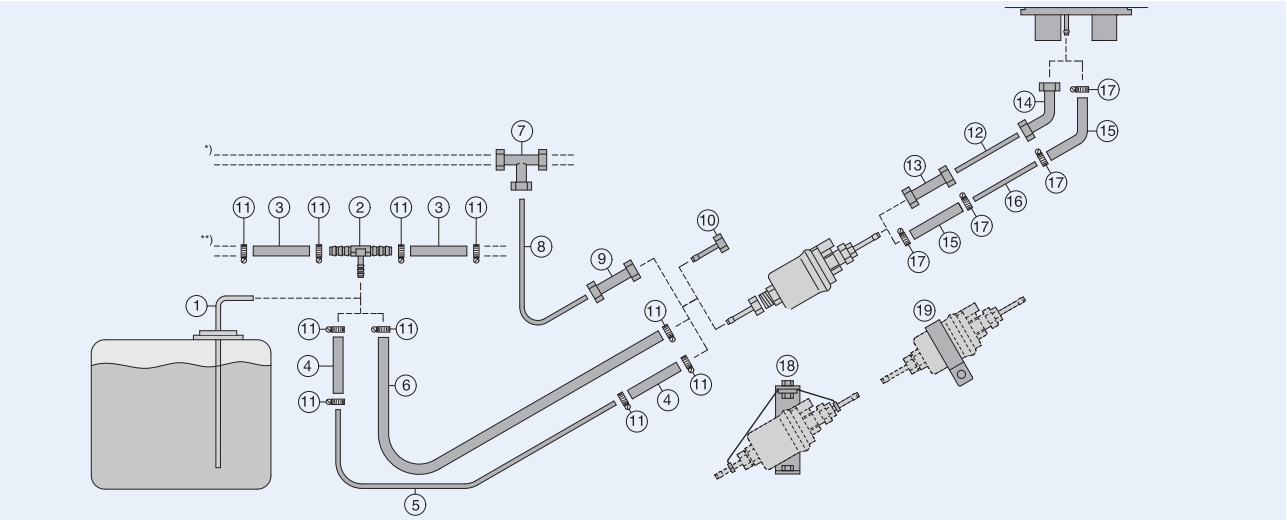
No.	Name
1	Pipe clamp
2	90°-angle exhaust pipe ø 24/30 mm
3	90°-angle exhaust pipe ø 24/30 mm with drain
4	Flexible spiral tube ø 30 mm
5	Condensate drainage
6	Exhaust insulation
7	Connector ø 30 mm with drainage
8	Exhaust muffler flexible
9	Opening in the boat hull

Fuel supply

In most cases, it is recommended that the fuel be drawn through a separate tank connection and that it be installed in the fuel tank (for metal tanks only). If installing a separate tank connection in the fuel tank is not an option, then fuel must be drawn through a T-fitting that is connected to the fuel supply line that runs from the fuel tank to the motor.

Please note!

- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Refer to the Additional Parts Catalogue or to the appropriate replacement parts lists if you need more parts for the fuel supply.
- Fuel hoses in engine compartments must be fire-retardant in accordance with DIN EN ISO 7840.



No.	Name
1	Tank connection i/d = ø 2 mm
2	T-fitting
	6 – 6 – 6
	8 – 6 – 8
	10 – 6 – 10
	12 – 6 – 12
3	Connecting hose
	ø 5x3 (for pipe 6x2)
	ø 7.5x2.5 (for pipe 8x2)
4	Connection
	Reductionfitting ø 5/3.5
	(for T-fitting and pipe 4x1)
	Hose ø 3.5x3 (for pipe 4x1)
	Hose ø 5x3 (for pipe 6x2)
5	Plastic pipe
	4x1
	6x2
6	Fuel hose 5x3
7	Threaded connection T ø 6
8	Metal pipe Cu 6x1
9	Threaded connection ø 6
10	Hose fitting ø 4
	(for metering pump for 4x1 pipe)
11	Hose clamp ø 11

No.	Name
12	Metal pipe 4x1
13	Threaded connection ø 4
14	90° threaded fitting ø 4
15	Connecting hose ø 3.5x3
	(for pipe 4x1.25)
16	Plastic pipe 4x1.25
17	Hose clamp ø 9

Metering pump bracket

18	Hanger assembly for the metering pump
19	Rubber bracket for the metering pump

Fuel connection kit in accordance with DIN EN ISO 7840

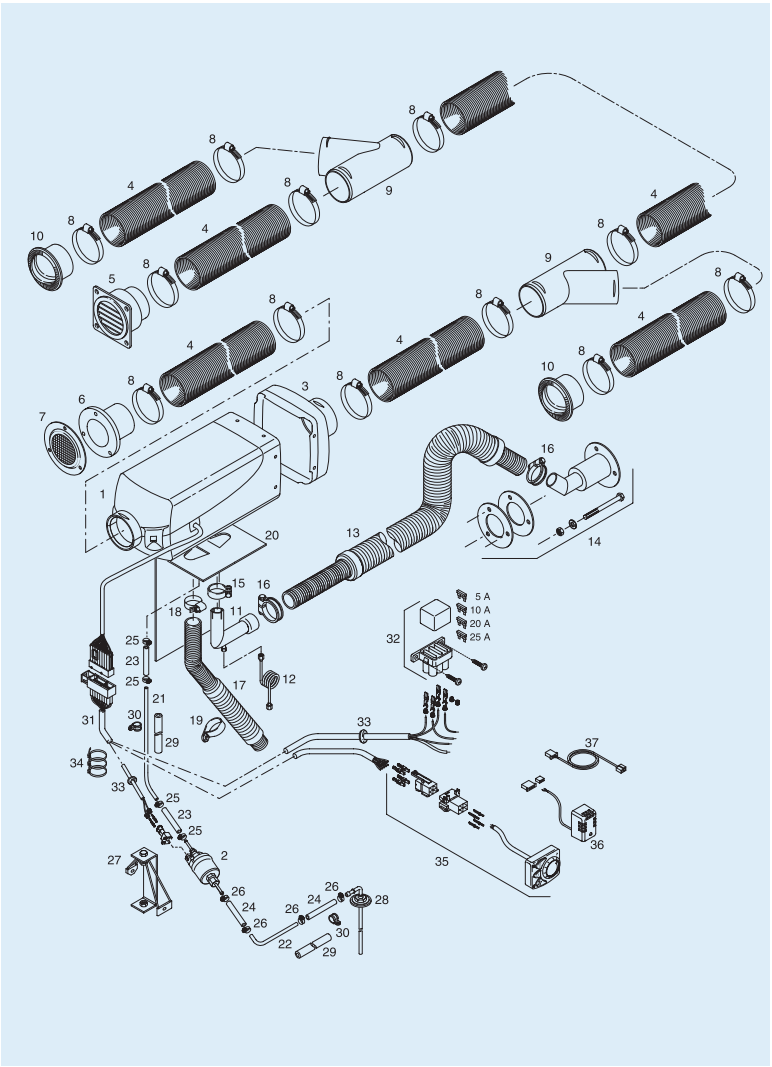
or Fig.	Fuel connection kit for boats
	is included:
	Two fire-retardant hoses,
	i/d = ø 3.5 mm, 50 mm long
	Two fire-retardant hoses,
	i/d = ø 5 mm, 50 mm long
	4 hose clamps, ø 12 mm
	4 hose clamps, ø 14 mm

Airtronic D3

Technical data

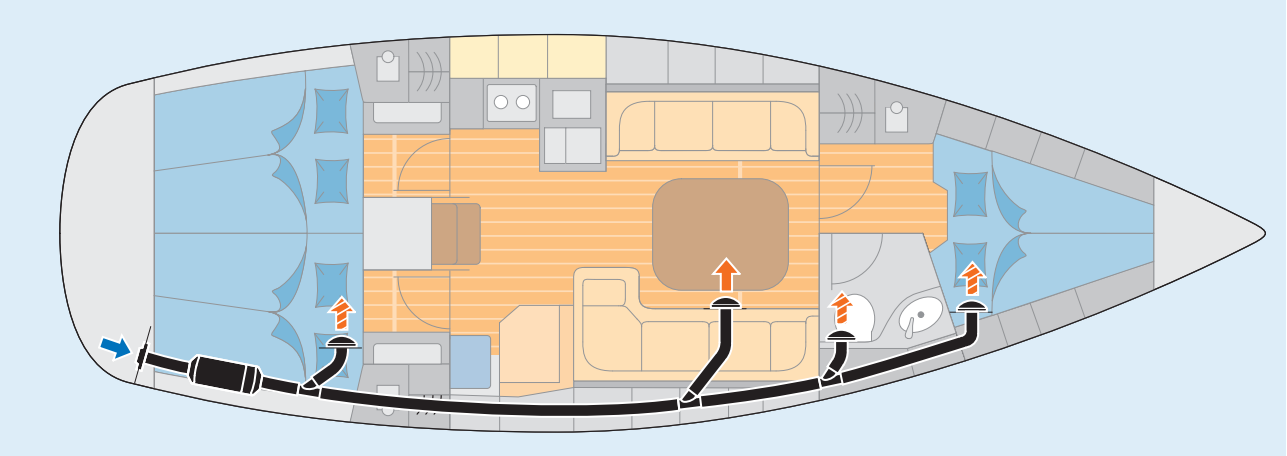
		Airtronic D3			
Voltage	**V**	12			
Heating levels of heat flow	**W**	Power 3000	Large 2.200	Medium 1.600	Small 900
Airthroughput	**m³/h**	130	100	80	52
Electrical power consumption (operation)	**W**	24	16	10	7
Fuel consumption	**l/h**	0.38	0.28	0.20	0.11
Dimensions LxWxH	**mm**	376x140x150			
Weight	**kg**	4.5			

Parts required for installation

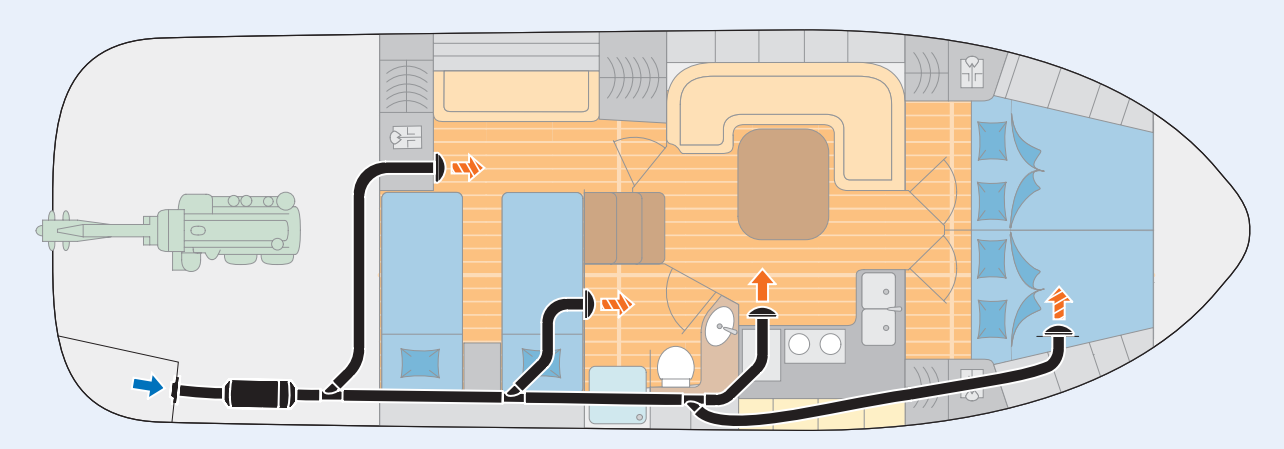


1	Airtronic D3 heater
2	Metering pump
3	Hood, Ø 75
4	Flexible tube, Ø 75
5	Outlet, Ø 75
6	Hose fitting, Ø 75
7	Grille
8	Hose clamp, Ø 70 - 90, (12x)
9	Y-branch, Ø 75
10	Round nozzle
11	90° exhaust pipe with run-off, Ø 24/30
12	Condensate drainage
13	Exhaust muffler
14	Opening in the boat hull
15	Pipe clamp
16	Pipe clamp, (2x)
17	Silencer, combustion air
18	Hose fitting, Ø 20/32
19	Hose fitting, Ø 50
20	Bracket, heater
21	Pipe, Ø 4 x 1.25, 7.5m long
22	Pipe, Ø 6 x 2, 1.5m long
23	Hose, Ø 3.5 x 3, running meter
24	Hose fitting, Ø 9 (4x)
25	Hose fitting, Ø 11 (4x)
26	Hose clamp, Ø 11 (4x)
27	Bracket metering pump
28	Fuel tank connection
29	Foam rubber hose, (2x)
30	Pipe clamp, Ø 10, (2x)
31	Wire harness
32	Fuse holder, triple
33	Bushing, (2x)
34	Cable tie, 200 mm long, (10x)
35	Mini-controller
36	Temperature sensor
37	Wire harness, temperature sensor

	Item parts list	Order numbers starting on page
Heater scope of delivery		
Airtronic D3 heater Metering pump	1-2	
The following must also be ordered:		
Parts conducting air	3-10	54
Parts conducting exhaust gas and combustion air	11-19	98
Fasteners	20/27	114
Parts carrying fuel	21-30	106
Electrical parts	31-34	
Controls and accessories	35-37	



In sailboats, the heater is usually installed in the ship's locker. The combustion air is drawn in from the locker and the exhaust gases are fed to the outside through the transom. For boats, fresh air is always drawn in from outside the boat. The air that is drawn in is heated as it goes through the heater's heat exchanger, passes through the hose system to the saloon area, the cabins or galley.



The ideal scenario for motorboats is to install the heater in the engine compartment. The combustion air is drawn in from the engine compartment and the exhaust gases are fed to the outside through the transom. Here, too, the fresh air is always drawn in from outside. The Airtronic's heat exchanger heats up the air that has been drawn in and it is fed through a hose system to heat the saloon area, the cabins and the galley.

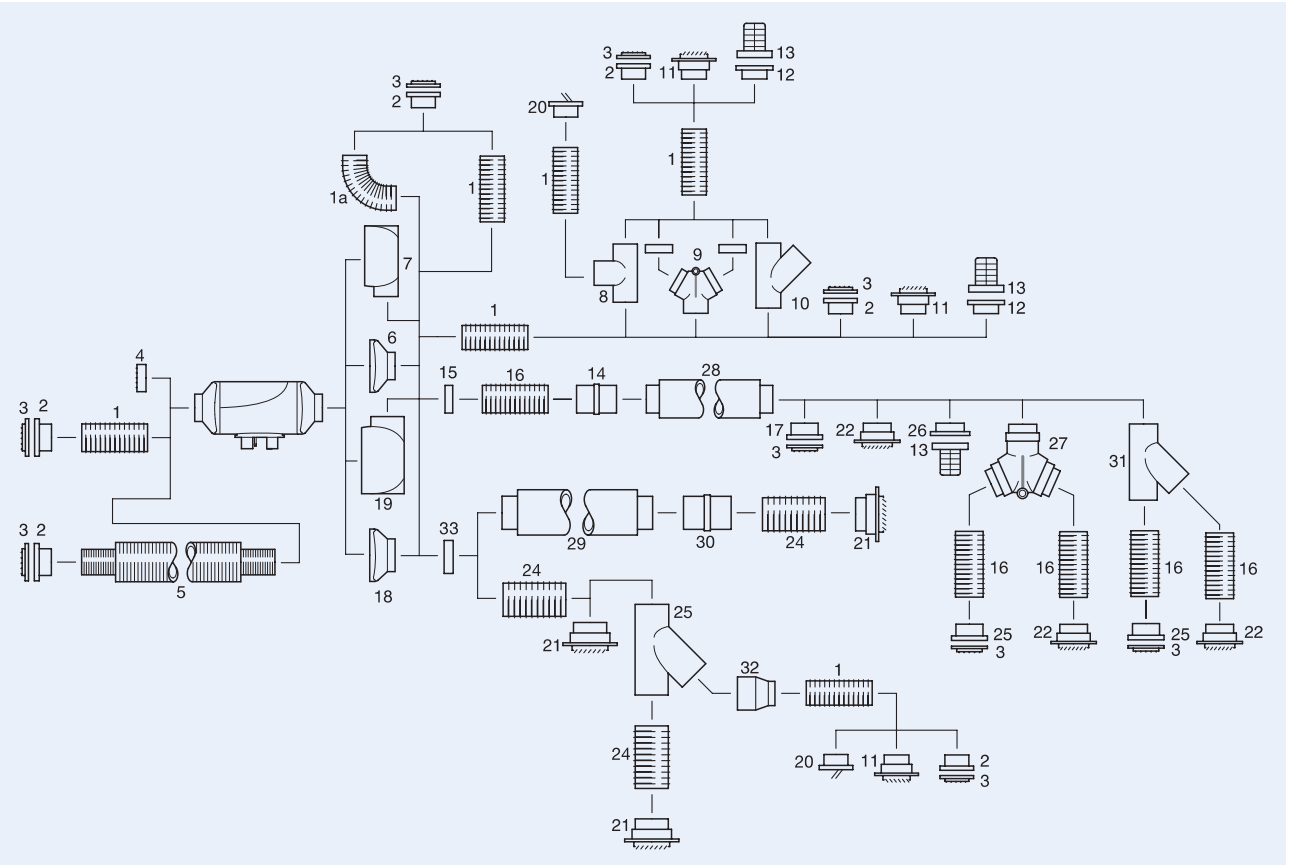
Electrical parts for air ducts

- The unit Component rating for the heater that includes the ø 75 mm air vent hood is 3.
- If the air vent hood = ø 90 mm, then the heater unit Component rating = 10.

This diagram shows how the most important parts for routing the air are used in a single-duct heater system or in a dual-duct heater system.

Single-duct heater means:
A hot-air duct goes either to or from the heater.
The part Component rating listed under “single duct” apply.

Dual-duct heater means:
The hot-air duct branches into two ducts after the heater.Parts Component rating listed under “single duct” apply from the heater to the branch, and starting right after the branch, the parts Component rating listed under “dual duct” apply.



Please note!

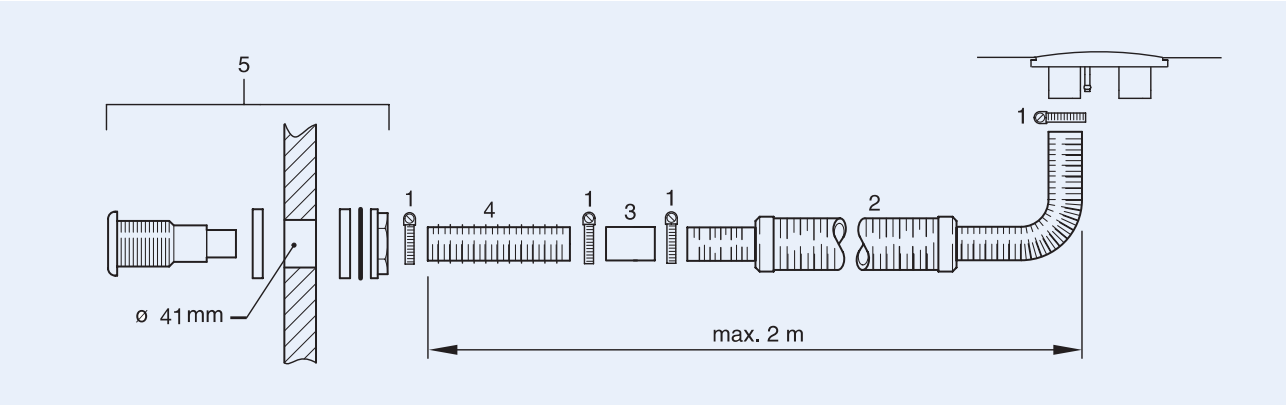
- Using an air ventvent that can be closed off is only possible with a dual-duct heater system, and with this option, one hot-air duct must remain permanently open (i.e. cannot be closed off). The hot-air duct that can be closed off must not be taken into account when figuring out the sum of the part Component rating.
- Follow the instructions for directing the air through ducts starting on page 20.
- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Do not use the diagram above as an example for installation.

Part Component rating for parts that duct air

Airtronic D3 with air vent hood ø 75 mm = unit Component rating 3/ø 90 mm = unit Component rating 10

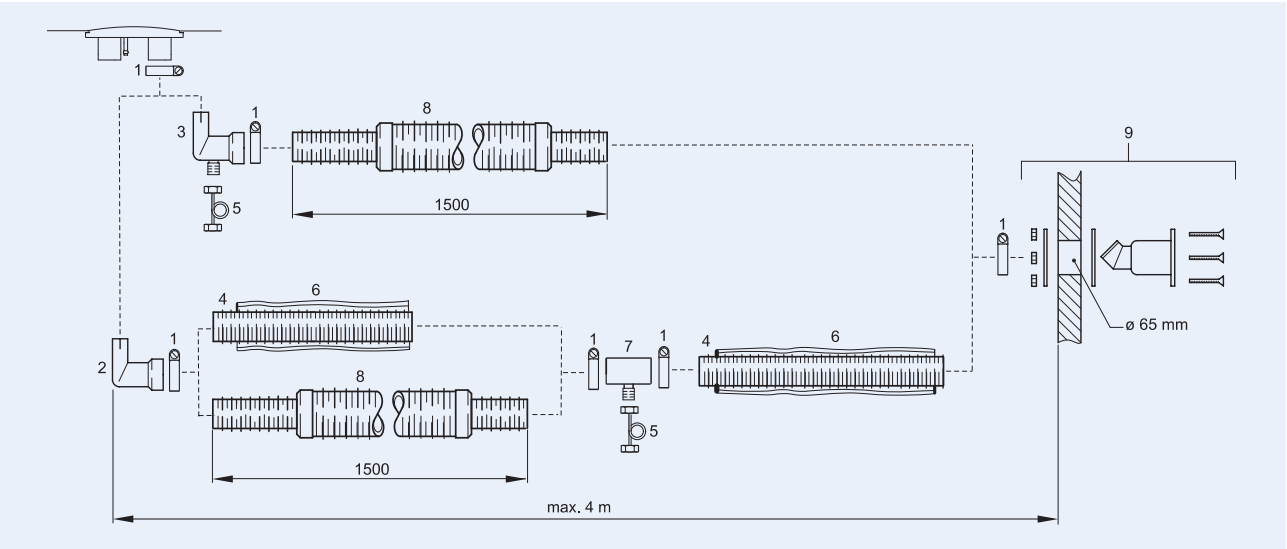
No.	Name	Part Component rating Single ductct ø 75 / ø 90	Dual ductct ø 75 / ø 90
1	Flexible tube ø 75 mm, each m	1 / –	0.2 / 0.3
1a	Flexible tube with 90°- bend ø 75 mm	1 / –	0.2 / 0.4
2	Hose fitting ø 75 mm, metal	1.4 / 1.4	– / 0.5
3	Grille	– / –	– / –
4	Grille ø 75 mm	– / –	– / –
5	Intake silencer ø 75 mm	1 / 0.8	– / –
6	Hood ø 75 mm	0 / –	– / –
7	Swiveling hood ø 75 mm	2 / –	– / –
8	T-branch ø 75 mm	– / –	0,3 / –
9	Control flap + ring ø 75 mm Flap position – centre Flap position – right/left	 0 / – 1.3 / –	 – / – – / –
10	Y-branch	– / –	1.8 / –
11	Air vent ø 60 mm, rotatable	0.6 / –	0.5 / 0.3
12	Fitting ø 75	– / –	– / –
13	Air vent	1 / 3.3	0.5 / 0.5
14	Hose connection fitting ø 75 mm	- / 0.1	– / –
15	Ring ø 75/90 mm	0 / 0	– / –
16	Flexible tube ø 90 mm, each m	– / 1	– / –
17	Hose fitting ø 90 mm, metal, for grille	– / 1.4	– / 0.5
18	Hood ø 90 mm	– / 0	– / –
19	Swiveling hood ø 90 mm	– / 5	– / –
20	Round nozzle ø 75 mm, can be closed off	– / –	1 / 2,1
21	Air vent ø 100 mm, rotatable	– / 1.4	– / 0.5
22	Exhauster ø 90 mm, rotatable	– / 2.4	– / 0.3
23	Grille ø 90 mm	– / 0	– / –
24	Flexible tube ø 100 mm, each m	– / 0.6	– / 0.4
25	Y-branch ø 100 mm	– / –	– / 0.5
26	Fitting ø 90 mm, with air vent, item 13	– / 3.3	– / –
27	Control flap ø 90 mm Flap position – centre Flap position – right/left	 – / 0 – / 1.4	 – / – – / –
28	Silencer ø 90 mm	– / 1	– / –
29	Silencer ø 100 mm	– / 1	– / –
30	Hose connection fitting ø 100 mm	– / 0.1	– / –
31	Y-fitting ø 90 mm	– / –	– / 0.5
32	Reduction fittingø 100/75 mm	– / –	– / 0.8
33	Ring ø 90/100 mm		

Parts for ducting combustion air



No.	Name
1	Hose clamp
2	Silencer for front left
3	Hose connecting pipe ø 25 mm
4	Flexible tube ø 25 mm
5	Boat hull opening for front left

Parts for routing the exhaust



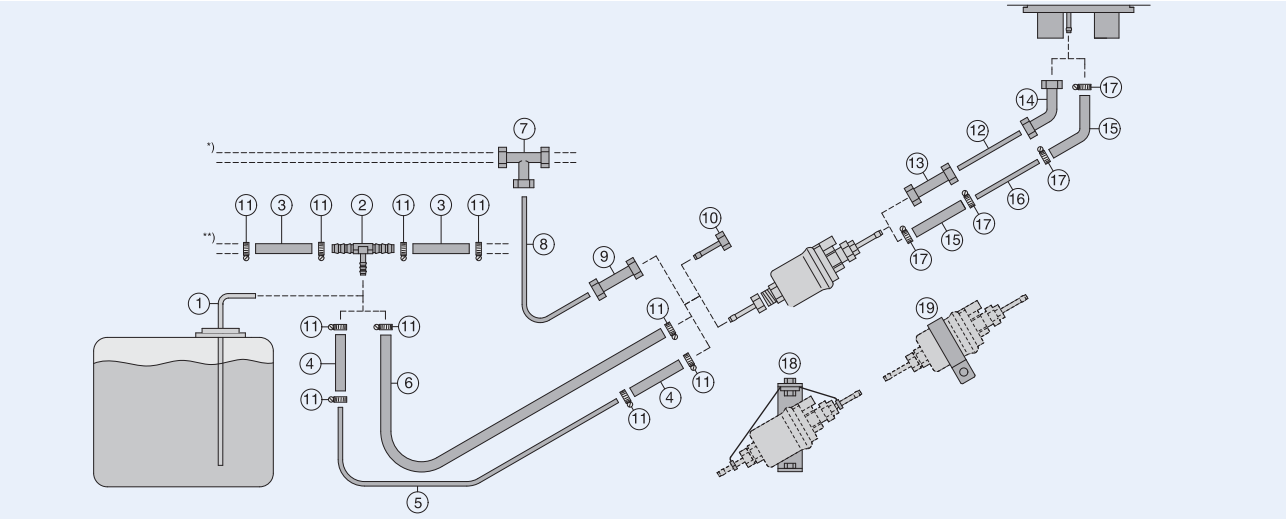
No.	Name
1	Pipe clamp
2	90°-angle exhaust pipe ø 24/30 mm
3	90°-angle exhaust pipe ø 24/30 mm with drain
4	Flexible spiral tube ø 30 mm
5	Condensate drainage
6	Exhaust insulation
7	Connector ø 30 mm with drainage
8	Exhaust muffler flexible
9	Opening in the boat hull

Fuel feed line

In most cases, it is recommended that the fuel be drawn through a separate tank connection and that it be installed in the fuel tank (for metal tanks only). If installing a separate tank connection in the fuel tank is not an option, then fuel must be drawn through a T-fitting that is connected to the fuel supply line that runs from the fuel tank to the motor.

Please note!

- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Refer to the Additional Parts Catalogue or to the appropriate replacement parts lists if you need more parts for the fuel supply.
- Fuel hoses in engine compartments must be fire retardant in accordance with DIN EN ISO 7840.



No.	Name
1	Tank connection i/d = ø 2 mm
2	T-fitting
	6 – 6 – 6
	8 – 6 – 8
	10 – 6 – 10
	12 – 6 – 12
3	Connecting hose
	ø 5x3 (for pipe 6x2)
	ø 7.5x2.5 (for pipe 8x2)
4	Connection
	Reduction fitting ø 5/3.5
	(for T fitting and pipe 4x1)
	Hose ø 3.5x3 (for pipe 4x1)
	Hose ø 5x3 (for pipe 6x2)
5	Plastic pipe
	4x1
	6x2
6	Fuel hose 5x3
7	Threaded connection T ø 6
8	Metal pipe Cu 6x1
9	Threaded connection ø 6
10	Hose fitting ø 4
	(for metering pump for 4x1 pipe)
11	Hose clamp ø 11

No.	Name
12	Metal pipe 4x1
13	Threaded connection ø 4
14	90°- threadedconnection ø 4
15	Connecting hose ø 3.5x3
	(for pipe 4x1.25)
16	Plastic pipe 4x1.25
17	Hose clamp ø 9

Metering pump mount

18	Hanger assembly for the metering pump
19	Rubber mount for the metering pump

Fuel connection kit in accordance with DIN EN ISO 7840

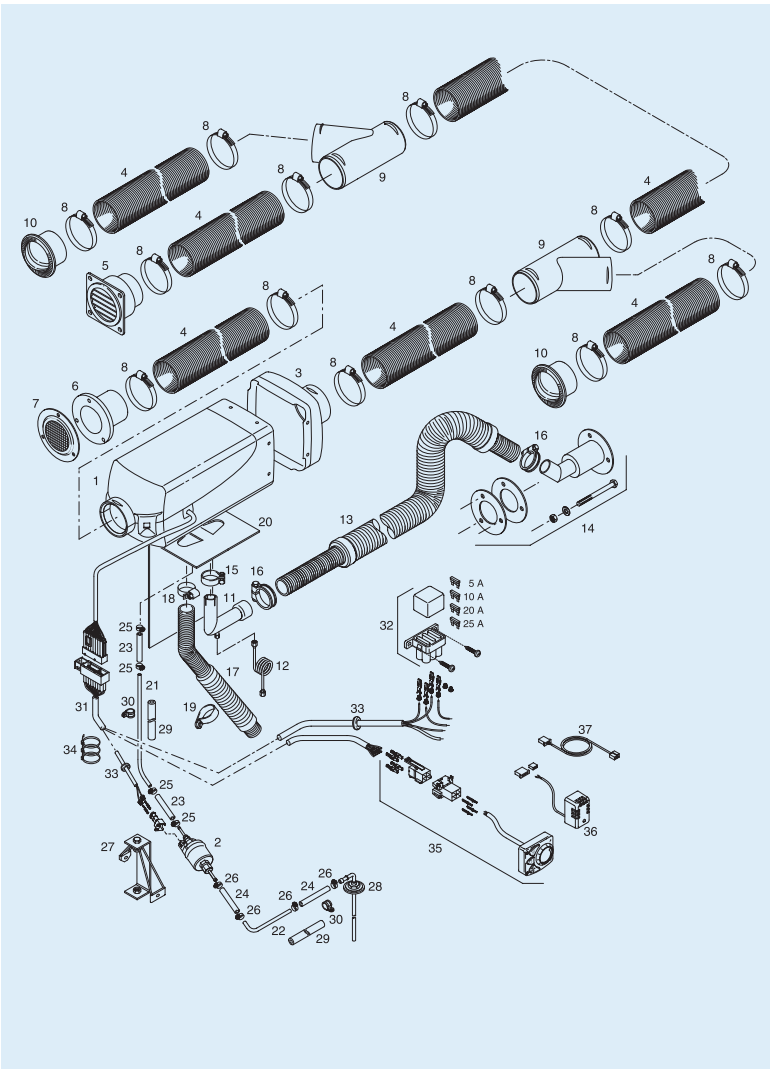
or Fig.	Fuel connection kit for boats
	includes:
	Two fire-retardant hoses,
	i/d = ø 3.5 mm, 50 mm long
	Two fire-retardant hoses,
	i/d = ø 5 mm, 50 mm long
	4 hose clamps, ø 12 mm
	4 hose clamps, ø 14 mm

Airtronic D4/D4 Plus

Technical data

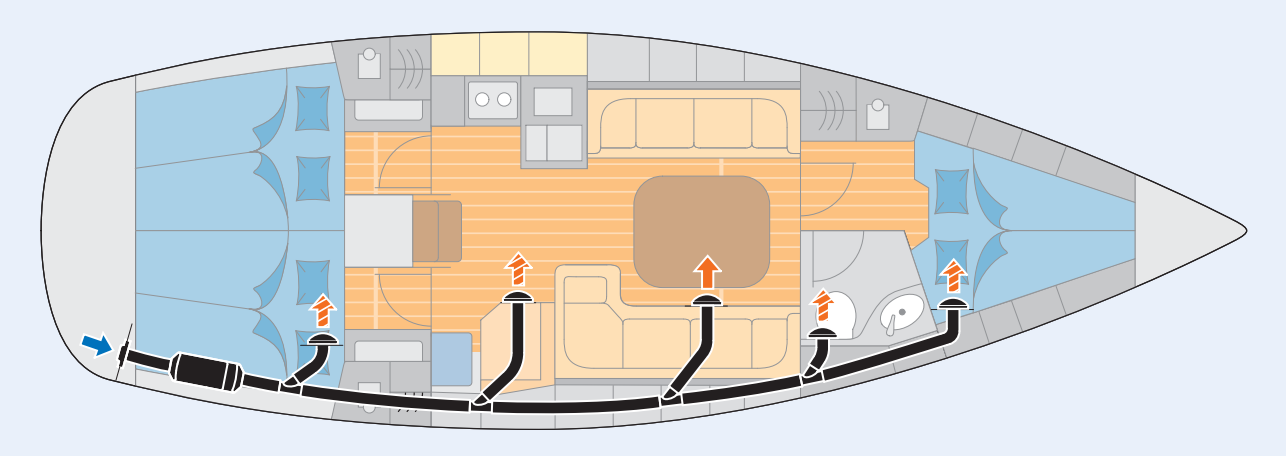
		Airtronic D4				Airtronic D4 Plus			
Voltage	**V**	12/24				12/24			
Heating levels of heat flow	**W**	Power 4.000	Large 3.000	Medium 2.000	Small 900	Power 4.000	Large 3.000	Medium 2.000	Small 900
Airthroughput	**m³/h**	160	130	95	55	155	120	86	45
Electrical power consumption (operation)	**W**	40	24	13	7	55	30	13	7
Fuel consumption	**l/h**	0.51	0.38	0.25	0.11	0.51	0.38	0.25	0.11
Dimensions LxWxH	**mm**	376 x 140 x 150				376 x 140 x 150			
Weight	**kg**	4.5				4.5			

Parts required for installation

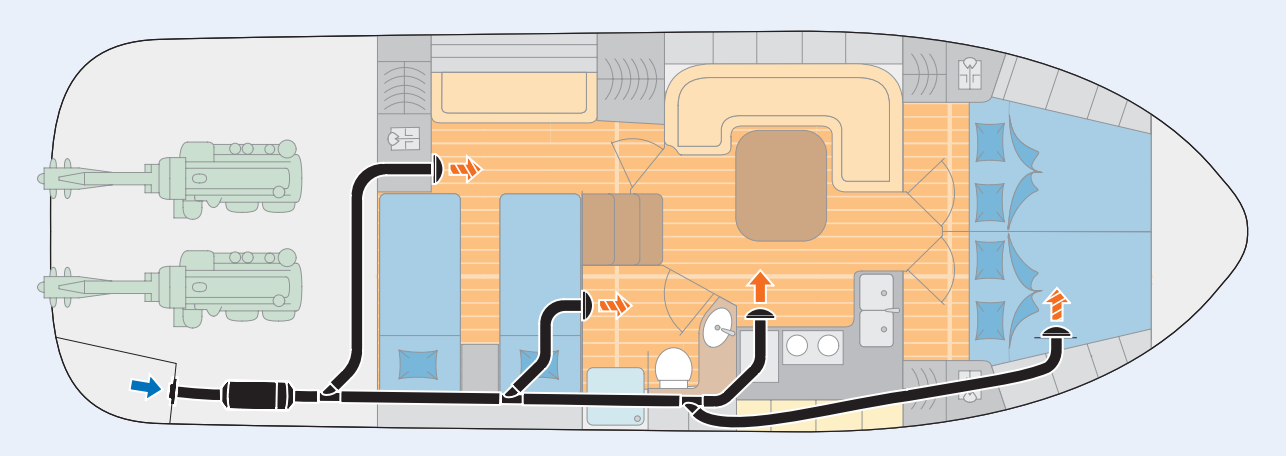


1	Airtronic D4 / D4 Plus Heater
2	Metering pump
3	Hood, Ø 75
4	Flexible tube, Ø 90
5	Outlet, Ø 75
6	Hose fitting, Ø 75
7	Grille
8	Hose clamp, Ø 70 - 90, (12x)
9	Y-branch, Ø 75
10	Round nozzle
11	90°-angle exhaust pipe with run-off, Ø 24/30
12	Condensate drainage
13	Exhaust muffler
14	Opening in the boat hull
15	Pipe clamp
16	Pipe clamp, (2x)
17	Muffler, combustion air
18	Hose clamp, Ø 20/32
19	Hose clamp, Ø 50
20	Bracket, heater
21	Pipe, Ø 4 x 1.25, 7.5m long
22	Pipe, Ø 6 x 2, 1.5m long
23	Hose, Ø 3.5 x 3, running meter
24	Hose, Ø 5 x 3, running meter
25	Hose fitting, Ø 9 (4x)
26	Hose fitting, Ø 11 (4x)
27	Bracket metering pump
28	Fuel tank connection
29	Foam rubber hose, (2x)
30	Pipe clamp, Ø 10, (2x)
31	Wire harness
32	Fuse holder, triple
33	Bushing, (2x)
34	Cable tie, 200 mm long, (10x)
35	Mini-controller
36	Temperature sensor
37	Wire harness, temperature sensor

	Item parts list	Order numbers starting on page
Heater scope of delivery		
Airtronic Airtronic D4 / D4 Plus Heater Metering pump	1-2	
The following must also be ordered:		
Parts conducting air	3-10	
Parts conducting exhaust and combustion air	11-19	54
Fasteners	20	98
Parts carrying fuel	21-30	114
Electrical parts	31-34	106
Controls and accessories	35-37	



In sailboats, the heater is usually installed in the ship's locker. The combustion air is drawn in from the locker and the exhaust gases are fed to the outside through the transom. In boats, the fresh air is always drawn in from outside. The Airtronic's heat exchanger heats up the air that has been drawn in and it is fed through a hose system to heat the saloon area, the cabins and the galley.



The ideal scenario for motorboats is to install the heater in the engine compartment. The combustion air is drawn in from the engine compartment and the exhaust gases are fed to the outside through the transom. Here, too, the fresh air is always drawn in from outside. The heater's heat exchanger heats up the air that has been drawn in and it is fed through a hose system to heat the saloon area, the cabins and the galley.

Parts for air ducts

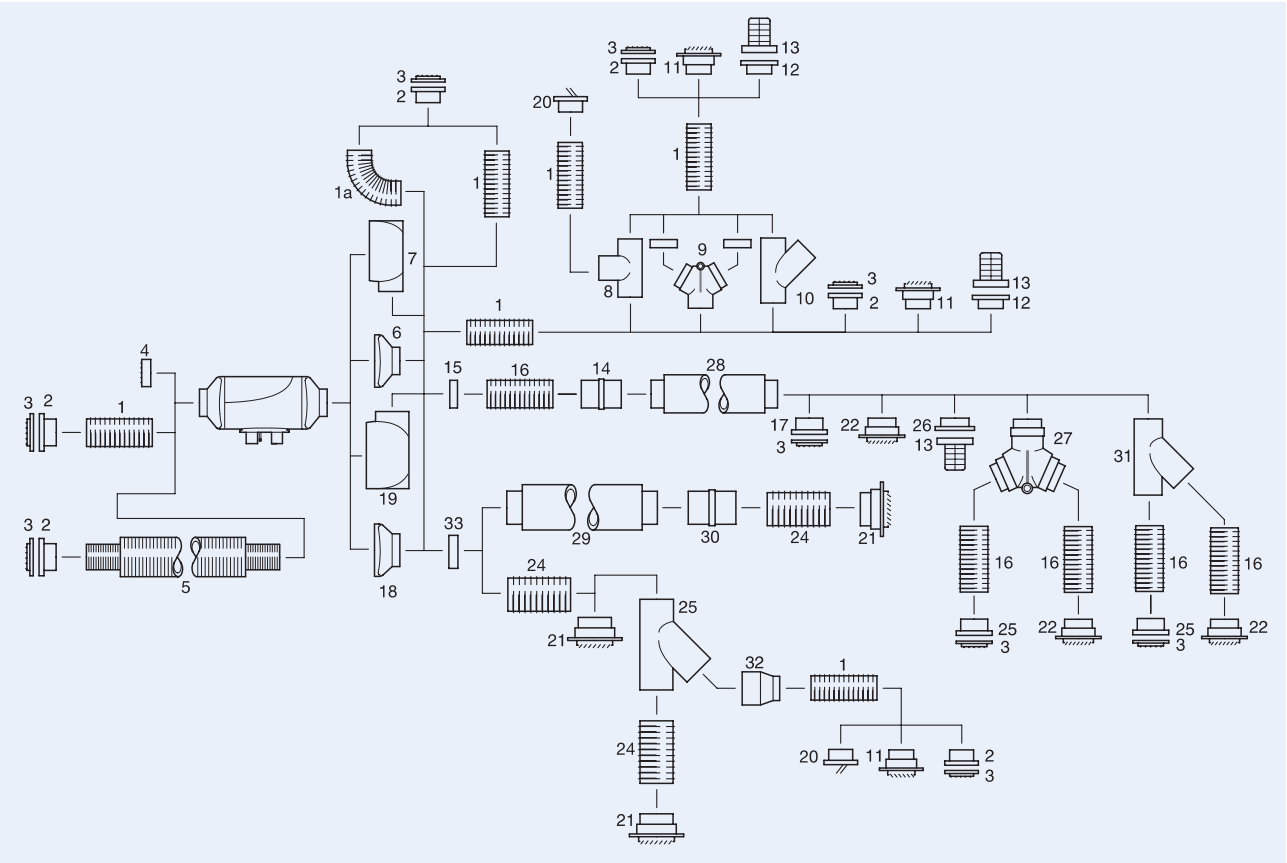
Unit Component rating for the **Airtronic D4** heater
- If the air venthood = ø 75 mm, then the heater unit Component rating = 3.
- If the air vent hood = ø 90 mm, then the heater unit Component rating = 10.

Unit Component rating for the **Airtronic D4Plus** heater
- If the air vent hood = ø 75 mm, the heater has a unit Component rating of 8 for ambient, 10 for fresh-air operation.
- If the air vent hood = ø 90 mm, then the heater unit Component rating = 15.

This diagram shows how the most important parts are used for routing the air in a single-duct heater system or in a dual-duct heater system.

Single-duct heater means:
A hot-air duct goes either to or from the heater.
The part Component rating listed under “single duct” apply.

Dual-duct heater means:
The hot-air duct branches into two ducts after the heater.
Parts Component rating listed under “single duct” apply from the heater to the junction, and starting right after the Y-junction, the parts Component rating listed under “dual duct” apply.



Please note!

- Using an air vent that can be closed off is only possible with a dual-duct heater system, and with this option, one hot-air duct for heating must remain permanently open (i.e. cannot be closed off). The hot-air duct for heating that can be closed off must not be taken into account when figuring out the sum of the part Component rating.
- Follow the instructions for directing the air through ducts starting on page 20.
- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Do not use the diagram above as an example for installation.

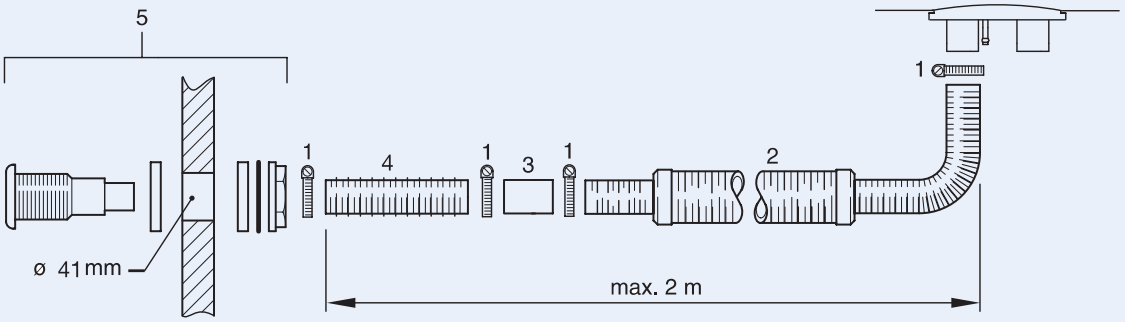
Part Component rating for parts that conductair

Airtronic D4 with air vent hood ø 75 mm = unit Component rating 3, ø 90 mm = unit Component rating 10
Airtronic D4 Plus with air vent hood ø 75 mm = unit Component rating 8/10, ø 90 mm = unit Component rating 15

No.	Name	Part Component rating Single duct ø 75 / ø 90	Dual duct ø 75 / ø 90
1	Flexible tube ø 75 mm, each m	1 / –	0.2 / 0.3
1a	Flexible tube with 90° bend ø 75 mm	1 / –	0.2 / 0.4
2	Hose fitting ø 75 mm, metal	1.4 / 1.4	– / 0.5
3	Grille	– / –	– / –
4	Grille ø 75 mm	– / –	– / –
5	Intake silencer ø 75 mm	1 / 0.8	– / –
6	Hood ø 75 mm	0 / –	– / –
7	Swiveling hood ø 75 mm*	2 / –	– / –
8	T-branch ø 75 mm	– / –	0.3 / –
9	Control flap + ring ø 75 mm Flap position – centre Flap position – right/left	 0 / – 1.3 / –	 – / – – / –
10	Y-branch	– / –	1.8 / –
11	Air vent ø 60 mm, rotatable	0.6 / –	0.5 / 0.3
12	Fitting ø 75	– / –	– / –
13	Air vent	1 / 3.3	0.5 / 0.5
14	Hose connection fitting ø 75 mm	–/ 0.1	– / –
15	Ring ø 75/90 mm	0 / 0	– / –
16	Flexible tube ø 90 mm, each m	– / 1	– / –
17	Hose fitting ø 90 mm, metal, for grille	– / 1.4	– / 0.5
18	Hood ø 90 mm	– / 0	– / –
19	Swiveling hood ø 90 mm	– / 5	– / –
20	Round nozzle ø 75 mm, lockable	– / –	1 / 2.1
21	Air vent ø 100 mm, rotatable	– / 1.4	– / 0.5
22	Air vent ø 90 mm, rotatable	– / 2.4	– / 0.3
23	Grille ø 90 mm	– / 0	– / –
24	Flexible tube ø 100 mm, each m	– / 0.6	– / 0.4
25	Y-branch ø 100 mm	– / –	– / 0.5
26	Fitting ø 90 mm, with air vent, item 13	– / 3.3	– / –
27	Control flap ø 90 mm Flap position – centre Flap position – right/left	 – / 0 – / 1.4	 – / – – / –
28	Silencer ø 90 mm	– / 1	– / –
29	Silencer ø 100 mm	– / 1	– / –
30	Hose connection fitting ø 100 mm	– / 0.1	– / –
31	Y-fitting ø 90 mm	– / –	– / 0.5
32	Reduction fitting ø 100/75 mm	– / –	– / 0.8
33	Ring ø 90/100 mm		

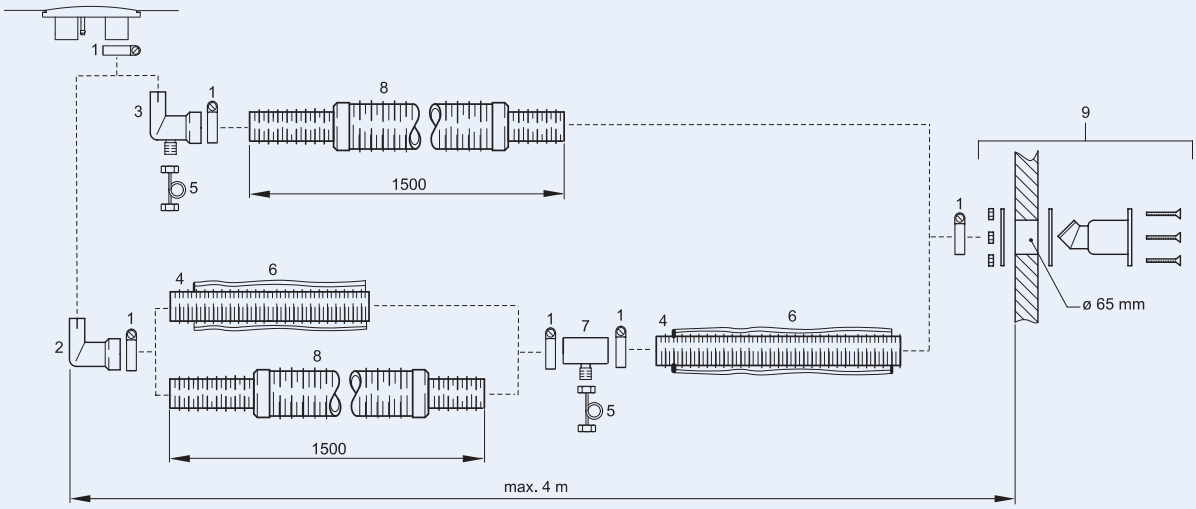
*only used for Airtronic D4

Parts for ducting combustion air



No.	Name
1	Hose clamp
2	Silencer for front left
3	Hose connecting pipe ø 25 mm
4	Flexible tube ø 25 mm
5	Boat hull opening for front left

Parts for routing the exhaust



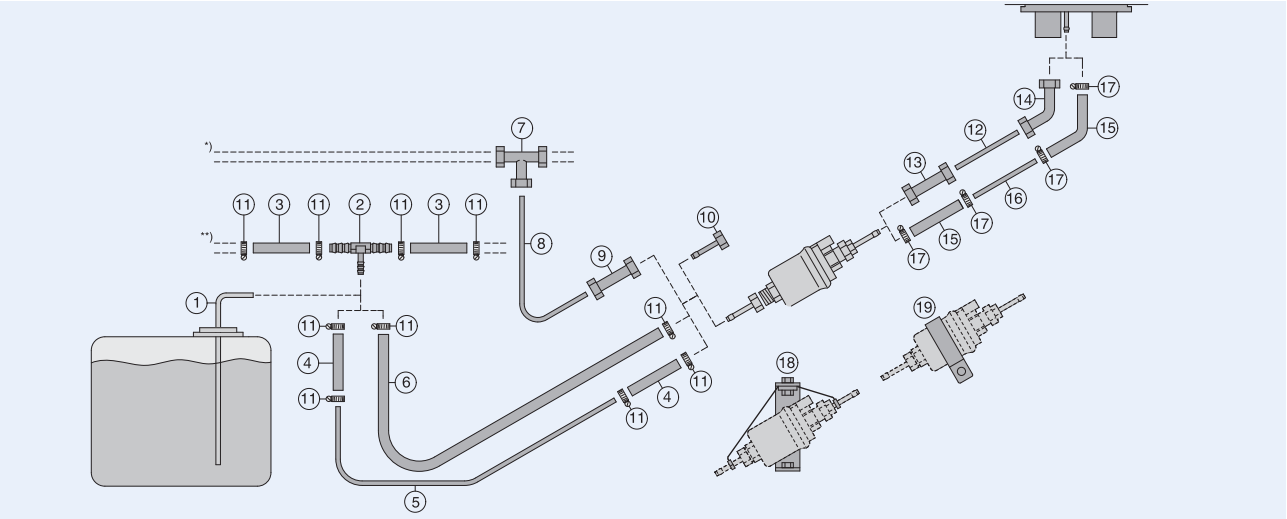
No.	Name
1	Pipe clamp
2	90°-angle exhaust pipe ø 24/30 mm
3	90°-angle exhaust pipe ø 24/30 mm with drain
4	Flexible spiral tube ø 30 mm
5	Condensate drainage
6	Exhaust insulation
7	Connector ø 30 mm with drainage
8	Exhaust muffler flexible
9	Opening in the boat hull

Fuel feed line

In most cases, it is recommended that the fuel be drawn through a separate tank connection and that it be installed in the fuel tank (for metal tanks only). If installing a separate tank connection in the fuel tank is not an option, then fuel must be drawn through a T-fitting that is connected to the fuel supply line that runs from the fuel tank to the motor.

Please note!

- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Refer to the Additional Parts Catalogue or to the appropriate replacement parts lists if you need more parts for the fuel supply.
- Fuel hoses in engine compartments must be fire retardant in accordance with DIN EN ISO 7840.



No.	Name
1	Tank connection i/d = ø 2 mm
2	T-fitting
	6 – 6 – 6
	8 – 6 – 8
	10 – 6 – 10
	12 – 6 – 12
3	Connecting hose
	ø 5x3 (for pipe 6x2)
	ø 7.5x2.5 (for pipe 8x2)
4	Connection
	Reduction fitting ø 5/3.5
	(for T fitting and pipe 4x1)
	Hose ø 3.5x3 (for pipe 4x1)
	Hose ø 5x3 (for pipe 6x2)
5	Plastic pipe
	4x1
	6x2
6	Fuel hose 5x3
7	Threaded connection T ø 6
8	Metal pipe Cu 6x1
9	Threaded connection ø 6
10	Hose fitting ø 4
	(for metering pump for 4x1 pipe)
11	Hose clamp ø 11

No.	Name
12	Metal pipe 4x1
13	Threaded connection ø 4
14	90°- threadedconnection ø 4
15	Connecting hose ø 3.5x3
	(for pipe 4x1.25)
16	Plastic pipe 4x1.25
17	Hose clamp ø 9

Metering pump mount

18	Hanger assembly for the metering pump
19	Rubber mount for the metering pump

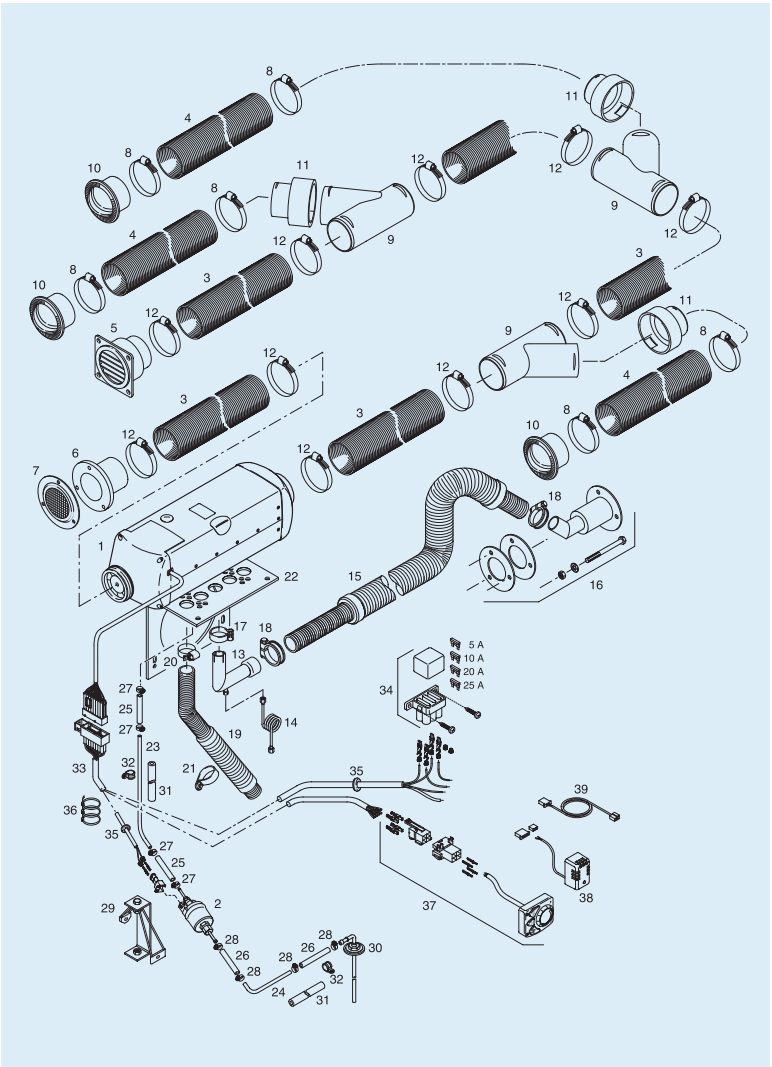
Fuel connection kit in accordance with DIN EN ISO 7840

or Fig.	Fuel connection kit for boats
	includes:
	Two fire-retardant hoses,
	i/d = ø 3.5 mm, 50 mm long
	Two fire-retardant hoses,
	i/d = ø 5 mm, 50 mm long
	4 hose clamps, ø 12 mm
	4 hose clamps, ø 14 mm

Technical data

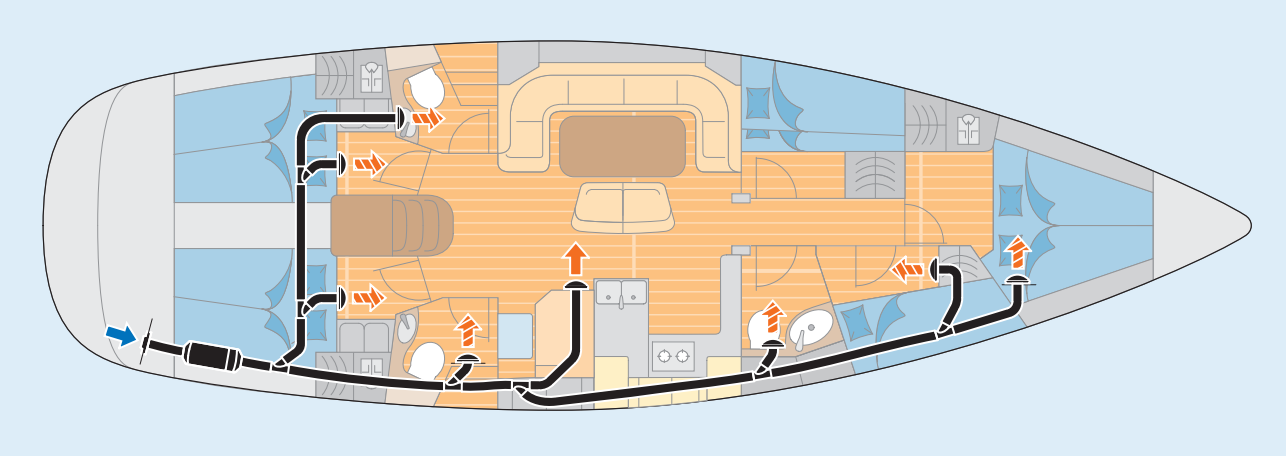
		Airtronic D5			
Voltage	**V**	12/24			
Heating levels of heat flow	**W**	Power 5,500	large 4,800	medium 2,700	small 1,600
Airthroughput	**m³/h**	233	210	160	130
Electrical power consumption (operation)	**W**	85	80	35	25
Fuel consumption	**l/h**	0.66	0.58	0.34	0.19
Dimensions LxWxH	**mm**	530 x 170 x 185			
Weight	**kg**	9.3			

Parts required for installation

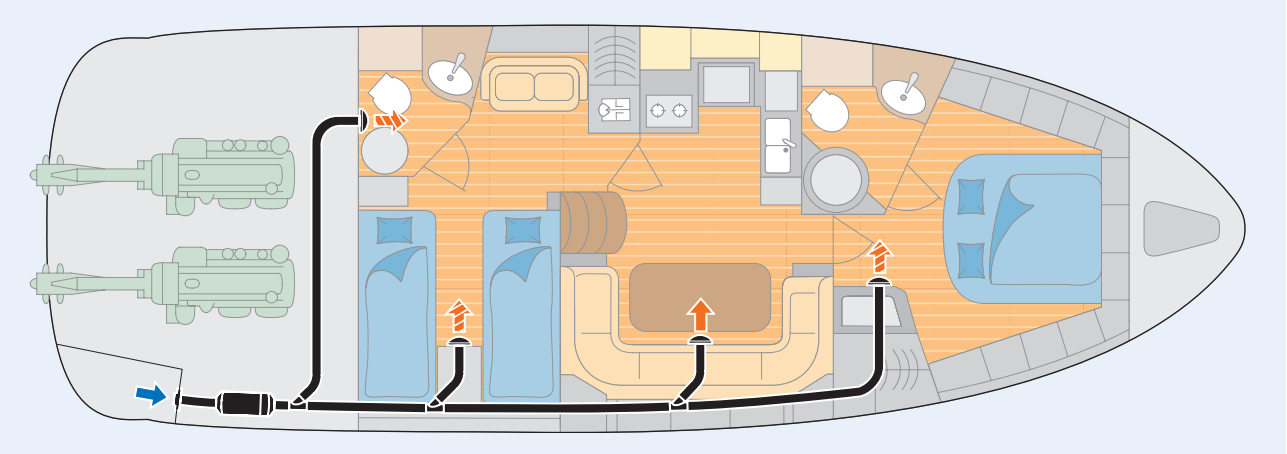


1	Airtronic D5 heater
2	Metering pump
3	Flexible tube, Ø 90
4	Flexible tube, Ø 75
5	Outlet, Ø 90
6	Hose fitting, Ø 90
7	Grille
8	Hose clamp, Ø 70 - 90, (6x)
9	Y-branch, Ø 90
10	Round nozzle
11	Reduction fitting
12	Hose clamp, Ø 90 - 110, (10x)
13	90°-angle exhaust pipe with drain, Ø 24/30
14	Condensate drainage
15	Exhaust muffler
16	Opening in the boat hull
17	Pipe clamp
18	Pipe clamp, (2x)
19	Silencer, combustion air
20	Hose fitting, Ø 20/32
21	Hose fitting, Ø 50
22	Bracket, heater
23	Pipe, Ø 4 x 1.25, 7.5m long
24	Pipe, Ø 6 x 2, 1.5m long
25	Hose, Ø 3.5 x 3, running meter
26	Hose, Ø 5 x 3, running meter
27	Hose clamp, Ø 9, (4x)
28	Hose clamp, Ø 11, (4x)
29	Bracket metering pump
30	Fuel tank connection
31	Foam rubber hose
32	Pipe clamp, Ø 10, (2x)
33	Cable harness
34	Fuse holder, triple
35	Bushing
36	Cable tie, 200 mm long, (10x)
37	Mini-controller
38	Temperature sensor
39	Wire harness, temperature sensor

	Item parts list	Order numbers starting on page
Heater scope of delivery		
Airtronic D5 heater Metering pump	1-2	
The following must also be ordered:		
Parts conducting air	3-12	54
Exhaust gas and combustion air system parts	13-21	98
Fasteners	22-29	114
Parts conducting fuel	23-32	106
Electrical parts	33-36	
Controls and accessories	37-39	



In sailboats, the heater is usually installed in the ship's locker. The combustion air is drawn in from the locker and the exhaust gases are fed to the outside through the transom. In boats, the fresh air is always drawn in from outside. The Airtronic's heat exchanger heats up the air that has been drawn in and it is fed through a hose system to heat the saloon area, the cabins and the galley.



The ideal scenario for motorboats is to install the heater in the engine compartment. The combustion air is drawn in from the engine compartment and the exhaust gases are fed to the outside through the transom. Here, too, the fresh air is always drawn in from outside. The heater's heat exchanger heats up the air that has been drawn in and it is fed through a hose system to heat the saloon area, the cabins and the galley.

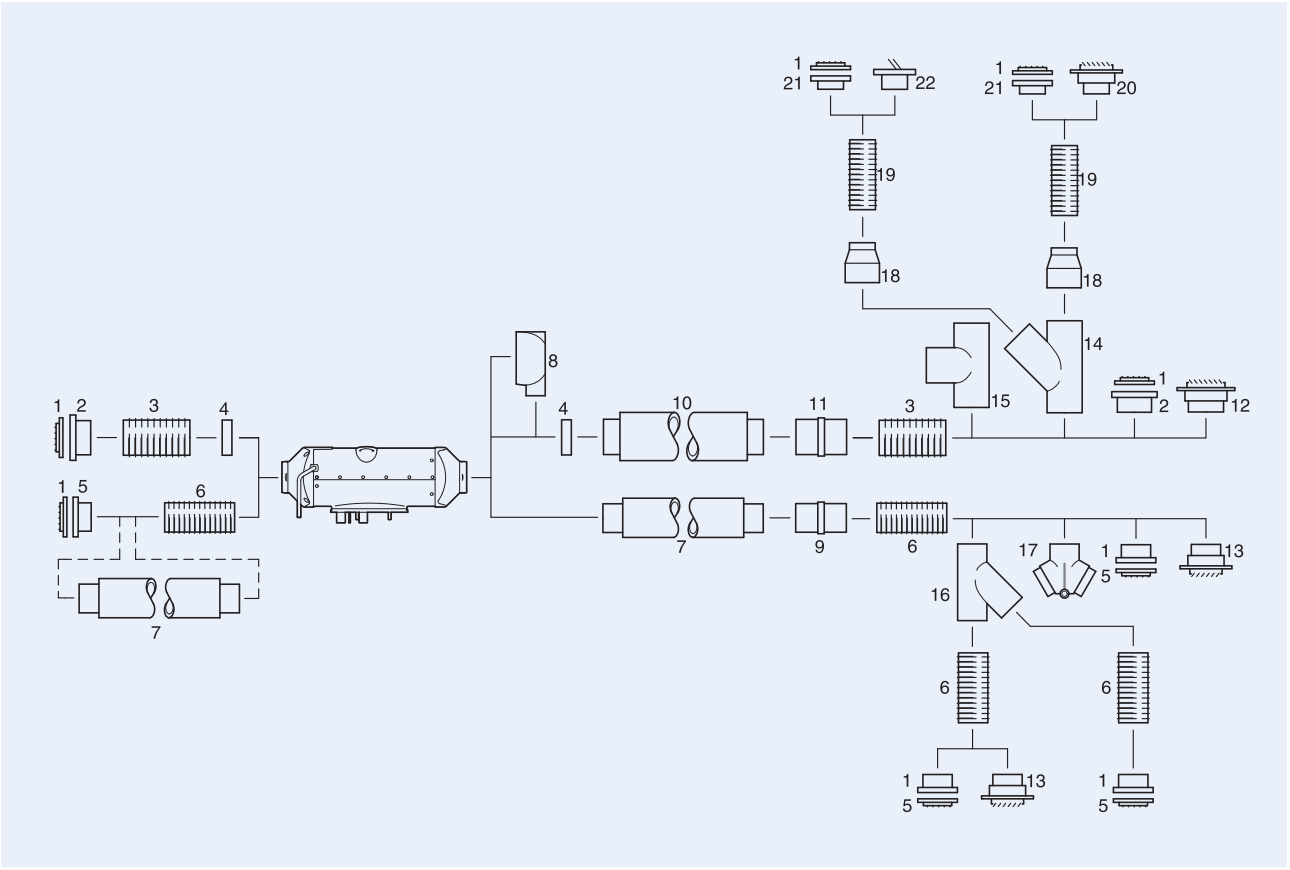
Electrical parts for air ducts

Unit Component rating for the heater = 10

This diagram shows how the most important parts are used for routing the air in a single-duct heater system or in a dual-duct heater system.

Single-duct heater means:
A hot-air duct goes either to or from the heater.
The part Component rating listed under “single duct” apply.

Dual-duct heater means:
The hot-air duct branches into two ducts after the heater.
Parts Component rating listed under “single duct” apply from the heater to the junction, and starting right after the Y junction, the parts Component rating listed under “dual duct” apply.



Please note!

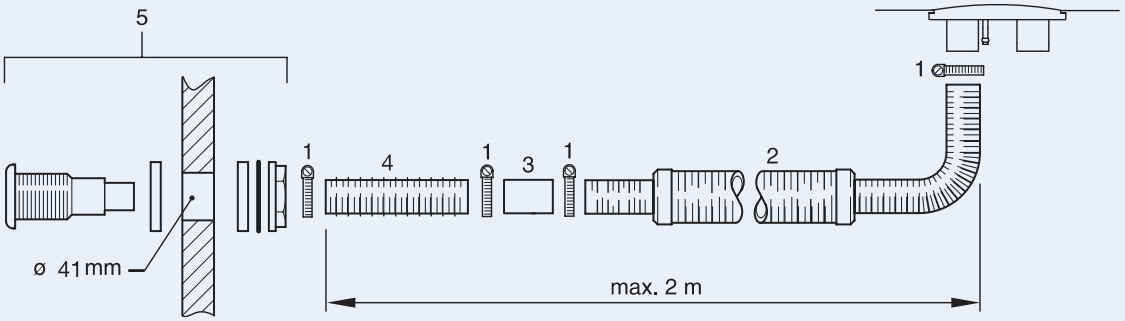
- Using an air vent that can be closed off is only possible with a dual-duct heater system, and with this option, one hot-air duct for heating must remain permanently open (i.e. cannot be closed off). The hot-air duct that can be closed off must not be taken into account when figuring out the sum of the part Component rating.
- Follow the instructions for directing the air through ducts starting on page 20.
- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter.
  The Technical Description is included with every heater.
- Do not use the diagram above as an example for installation.

Part Component rating for parts that conduct air

Unit Component rating heater = 10

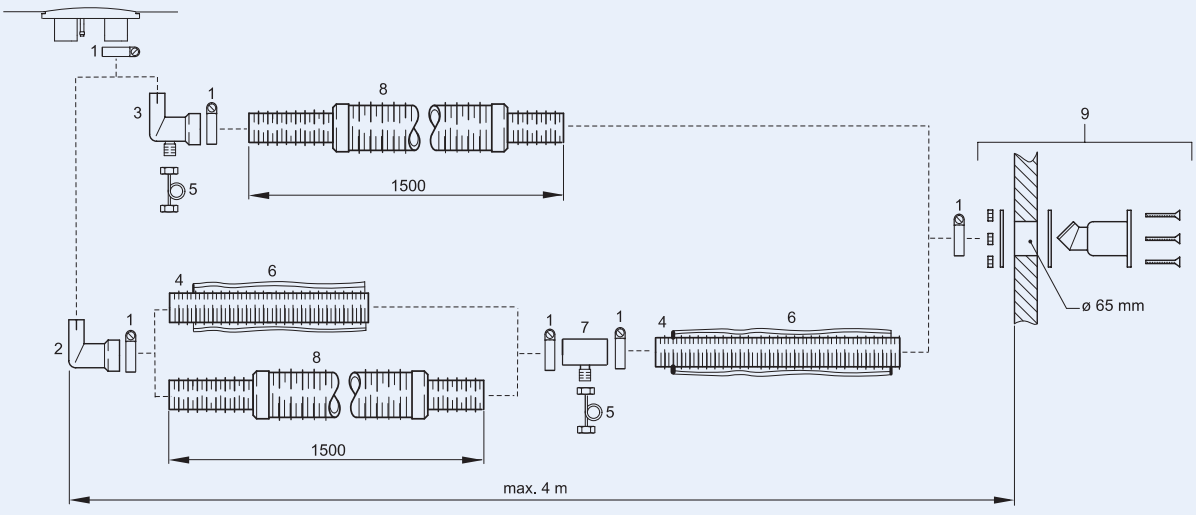
No.	Name	Single duct	Dual ductct
1	Grille	0.5	0.25
2	Hose fitting ø 100 mm, metal	0	0
3	Flexible tube ø 100 mm, each m	0.5	0.25
–	Flexible tube with 90° bend ø 100 mm	0	0
4	Grille or ring ø 90/100 mm	0	–
5	Hose fitting ø 90 mm, metal	0	0
6	Flexible tube ø 90 mm, each m	1	0.3
–	Flexible tube with 90°- bend ø 90 mm	0.25	0
7	Silencer ø 90 mm	0,6	0.3
8	Swiveling hood ø 90 mm	1.5	–
9	Fitting ø 90 mm	–	–
10	Silencer ø 100 mm	0.25	0
11	Fitting ø 100 mm	–	–
12	Air vent ø 100 mm, rotatable	3.25	1
13	Air vent ø 90 mm, rotatable	3.25	1
14	Y-branch ø 100 mm	0.5	0
15	T-branch ø 100 mm	0.25	0
16	Y-branch ø 90 mm	0.5	0
17	Control flap ø 90 mm Flap position - centre Flap position - right/left	 0 1	 – –
18	Reduction fitting ø 100/75 mm	2.75	1
19	Flexible tube ø 75 mm, each m	–	1.5
–	Flexible tube with 90°- bend ø 75 mm	–	0.5
20	Air vent ø 75 mm, rotatable	–	1.25
21	Hose fitting ø 75 mm, metal	–	0
22	Round nozzle ø 75 mm, lockable	–	–

Parts for ducting combustion air



No.	Name
1	Hose clamp
2	Silencer for front left
3	Hose connecting pipe ø 25 mm
4	Flexible tube ø 25 mm
5	Boat hull opening for front left

Parts for exhaust routing



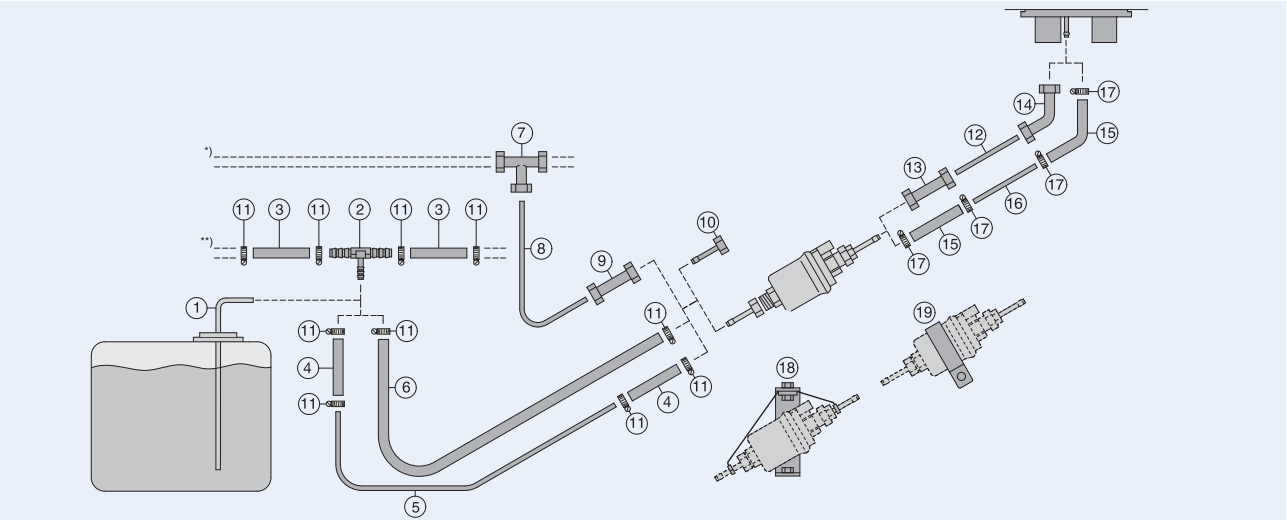
No.	Name
1	Pipe clamp
2	90°-angle exhaust pipe ø 24/30 mm
3	90°-angle exhaust pipe ø 24/30 mm with drainage
4	Flexible spiral tube ø 30 mm
5	Condensate drainage
6	Exhaust insulation
7	Connector ø 30 mm with drain
8	Exhaust muffler flexible
9	Opening in the boat hull

Fuel feed line

In most cases, it is recommended that the fuel be drawn through a separate tank connection and that it be installed in the fuel tank (for metal tanks only). If installing a separate tank connection in the fuel tank is not an option, then fuel must be drawn through a T-fitting that is connected to the fuel supply line that runs from the fuel tank to the motor.

Please note!

- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Refer to the Accessory Parts Catalogue or to the appropriate replacement parts lists if you need more parts for the fuel supply.
- Fuel hoses in engine compartments must be fire retardant in accordance with DIN EN ISO 7840.



No.	Name
1	Tank connection i/d = ø 2 mm
2	T-fitting
	6 – 6 – 6
	8 – 6 – 8
	10 – 6 – 10
	12 – 6 – 12
3	Connecting hose
	ø 5x3 (for pipe 6x2)
	ø 7.5x2.5 (for pipe 8x2)
4	Connection
	Reduction fitting ø 5/3.5
	(for T-fitting and pipe 4x1)
	Hose ø 3.5x3 (for pipe 4x1)
	Hose ø 5x3 (for pipe 6x2)
5	Plastic pipe
	4x1
	6x2
6	Fuel hose 5x3
7	Threaded connection T ø 6
8	Metal pipe Cu 6x1
9	Threaded connection ø 6
10	Hose fitting ø 4
	(for metering pump for 4x1 pipe)
11	Hose clamp ø 11

No.	Name
12	Metal pipe 4x1
13	Threaded connection ø 4
14	90°-angle threaded connection ø 4
15	Connecting hose ø 3.5x3
	(for pipe 4x1.25)
16	Plastic pipe 4x1.25
17	Hose clamp ø 9

Metering pump mount

18	Fuel connection kit for boats is included:
19	Rubber mount for the metering pump

Fuel connection kit in accordance with DIN EN ISO 7840

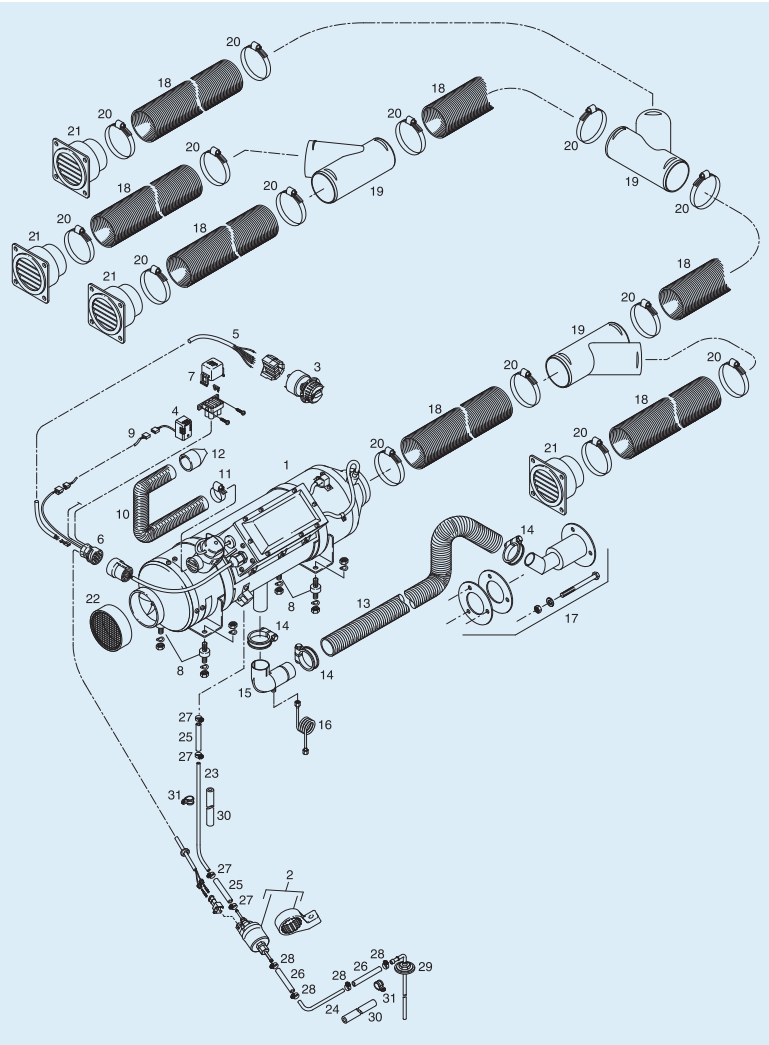
or Fig.	Fuel connection kit for boats
	is included:
	2 fire-retardant hoses,
	i/d = ø 3.5 mm, 50 mm long
	2 fire-retardant hoses,
	i/d = ø 5 mm, 50 mm long
	4 hose clamps, ø 12 mm
	4 hose clamps, ø 14 mm

Air Heater D8LC

Technical data

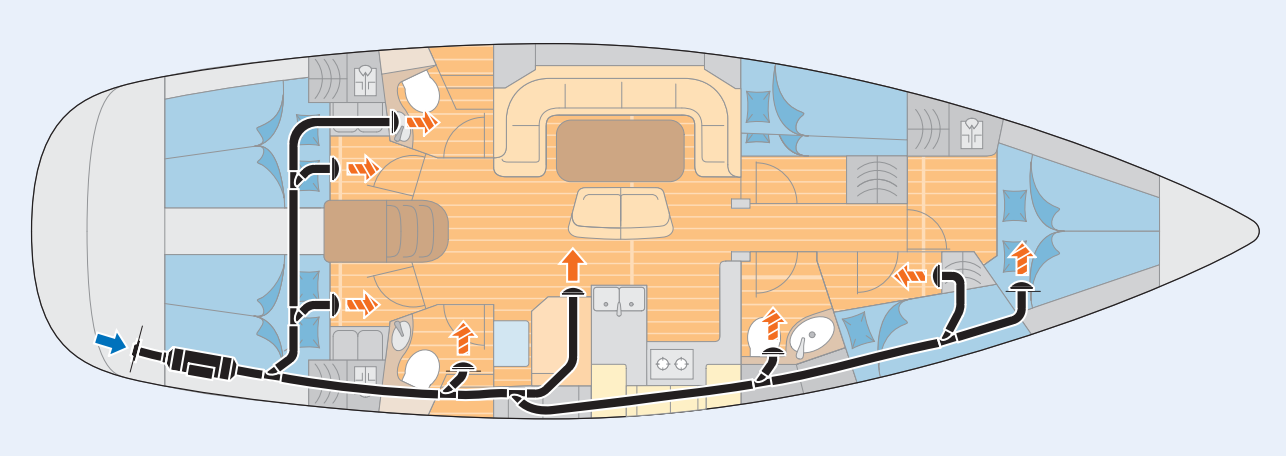
		D8L C	
Voltage	**V**	12/24	
Heating levels of heat flow	**W**	large 8,000	small 3,500
Airthroughout	**m³/h**	250	250
Electrical power consumption (operation)	**W**	115	380
Fuel consumption	**l/h**	1.0	0.40
Dimensions LxWxH	**mm**	653x260x250	
Weight	**kg**	14	

Installing the required parts

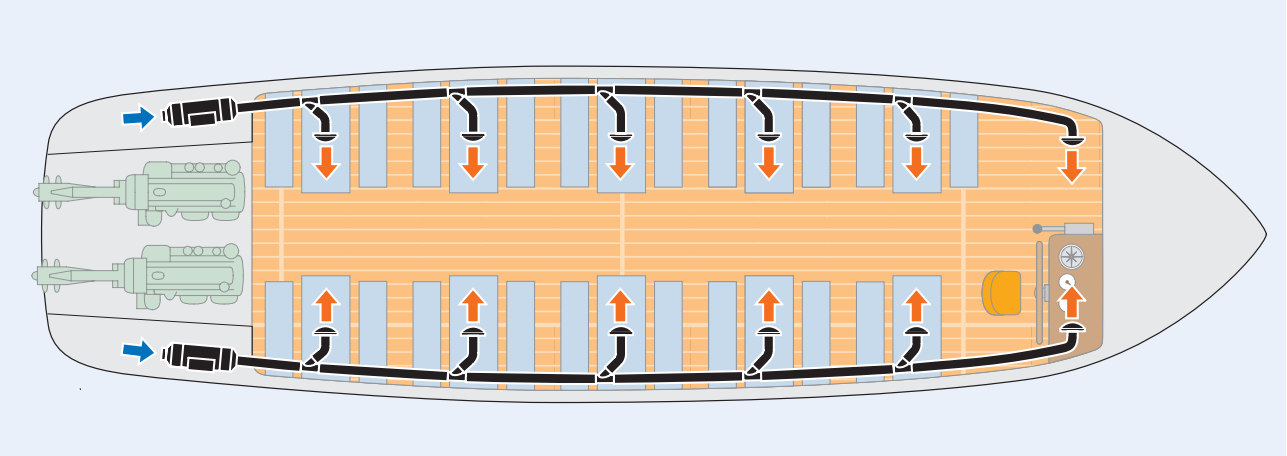


1	Heater D8LC
2	Metering pump and mounting bracket
3	Control unit
4	Temperature sensor, external
5	Wire harness with connectors
6	Socket housing with connectors
7	Fuse holder
8	Metal-rubber spacer, (4x)
9	Wire harness, temperature sensor
10	Combustion air hose
11	Hose clamp, Ø 32/50
12	End sleeve
13	Flex. exhaust pipe Ø 40mm
14	Pipe clamp, (3x)
15	Exhaust elbow pipe with drain
16	Condensate drainage
17	Opening in the boat hull
18	Flexible pipe, Ø 100
19	Y-branch, Ø 100
20	Hose clamp, Ø 90 - 110, (14x)
21	Air vent, Ø 100 (4x)
22	Grille
23	Pipe, Ø 4 x 1
24	Pipe, Ø 6 x 2, 1.5m long
25	Hose, Ø 3.5 x 3, running meter
26	Hose, Ø 5 x 3 running meter
27	Hose clamp, Ø 9, (4x)
28	Hose clamp, Ø 11, (4x)
29	Fuel tank connection
30	Foam rubber hose, (2x)
31	Pipe clamp, Ø 10, (2x)

	Item parts list	Order numbers starting on page
Heater scope of delivery		
Heater D8LC	1-8	
The following must also be ordered:	9	
Electrical parts	10-17	98
Exhaust gas and combustion air system parts	18-22	54
Parts conducting air	23-31	106
Parts conducting fuel		



In sailboats, the heater is usually installed in the ship's locker. The combustion air is drawn in from the locker and the exhaust gases are fed to the outside through the transom. In boats, the fresh air is always drawn in from outside. The heat exchanger of the D8LC heats up the air that has been drawn in and it is fed through a hose system to heat the saloon area, the cabins and the galley.



On pleasure craft, the heater is usually installed in the ship's locker. The combustion air is drawn in from the locker and the exhaust gases are fed to the outside through the transom. In boats, the fresh air is always drawn in from outside. The heater's heat exchanger heats up the air that has been drawn in and it is fed through a hose system to heat the passenger area

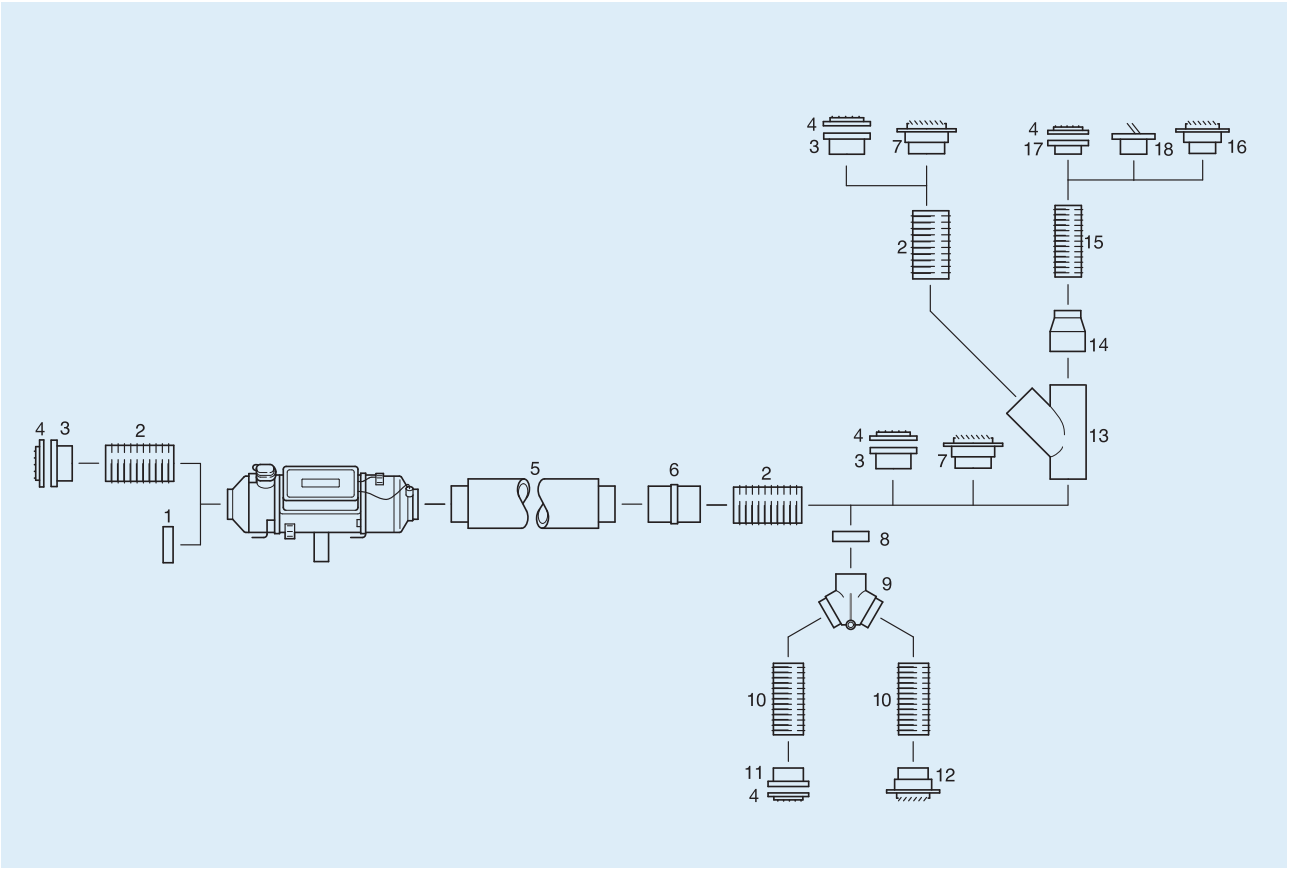
Electrical parts for air ducts

Unit Component rating for the heater = 8

This diagram shows how the most important parts are used for routing the air in a single-duct heater system or in a dual-duct heater system.

Single-duct heater means:
A hot-air duct goes either to or from the heater. The part Component rating listed under “single duct” apply.

Dual-duct heater means:
The hot-air duct branches into two ducts after the heater.
Parts Component rating listed under “single duct” apply from the heater to the branch, and starting right after the branch, the parts Component rating listed under “dual duct” apply.



Please note!

- Using an air vent that can be closed off is only possible with a dual-duct heater system, and with this option, one hot-air duct for heating must remain permanently open (i.e. cannot be closed off). The hot-air duct for heating that can be closed off must not be taken into account when figuring out the sum of the part Component rating.
- Follow the instructions for directing the air through ducts starting on page 20.
- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter.
  The Technical Description is included with every heater.
- Do not use the diagram above as an example for installation.

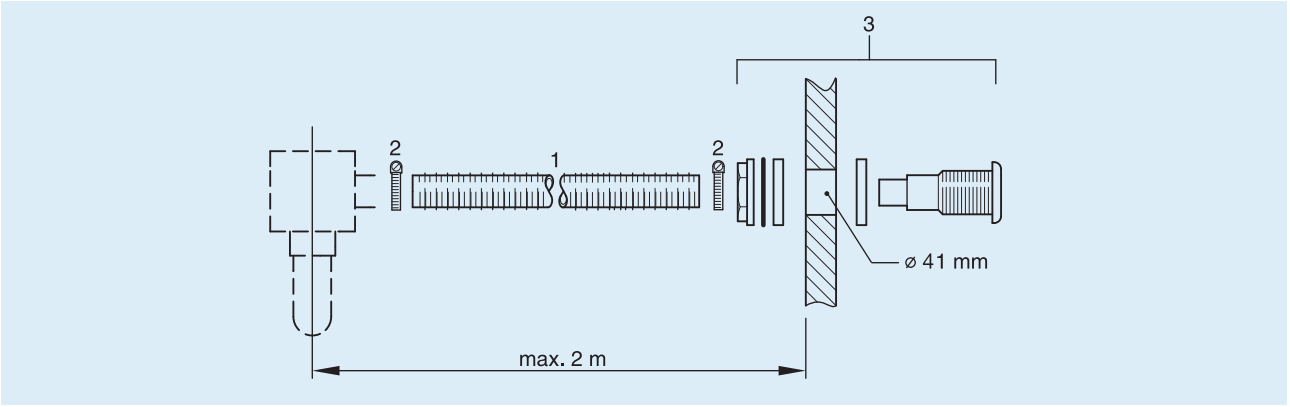
Part Component rating for parts that direct air through ducts

Unit Component rating for the heater = 8

No.	Name	Part Component rating Single ductct	Dual ductct
1	Grille ø 100 mm	0.1	–
2	Flexible tube ø 100 mm, each m 90°- bend of flexible tube ø 100 mm	1.0 0.5	0.25 0.15
3	Hose fitting ø 100 mm, metal	0.18	0.1
4	Grille, painted ø 100 mm Grille, nickel-plated ø 100 mm	0.18 0.18	0.1 0.1
5	Exhaust silencer ø 100 mm	1.1	0.25
6	Fitting ø 100 mm	–	–
7	Air vent ø 100 mm, rotatable	3.25	1.1
8	Grille ø 90/100 mm	0	–
9	Control flap ø 90/90/90 mm	2.4	–
10	Flexible tube ø 90 mm, each m	1	0.25
11	Hose fitting ø 90 mm, metal	–	–
12	Air vent ø 90 mm, rotatable	–	1.4
13	Y-branch ø 100 mm	0	–
14	Reduction fitting ø 100/75 mm	–	0.55
15	Flexible tube ø 75 mm, each m 90°- bend of flexible tube ø 75 mm	– –	1.1 1.1
16	Air vent ø 75 mm, rotatable	–	–
17	Fitting ø 75 mm	–	0.1
18	Round nozzle, lockable	–	0.15

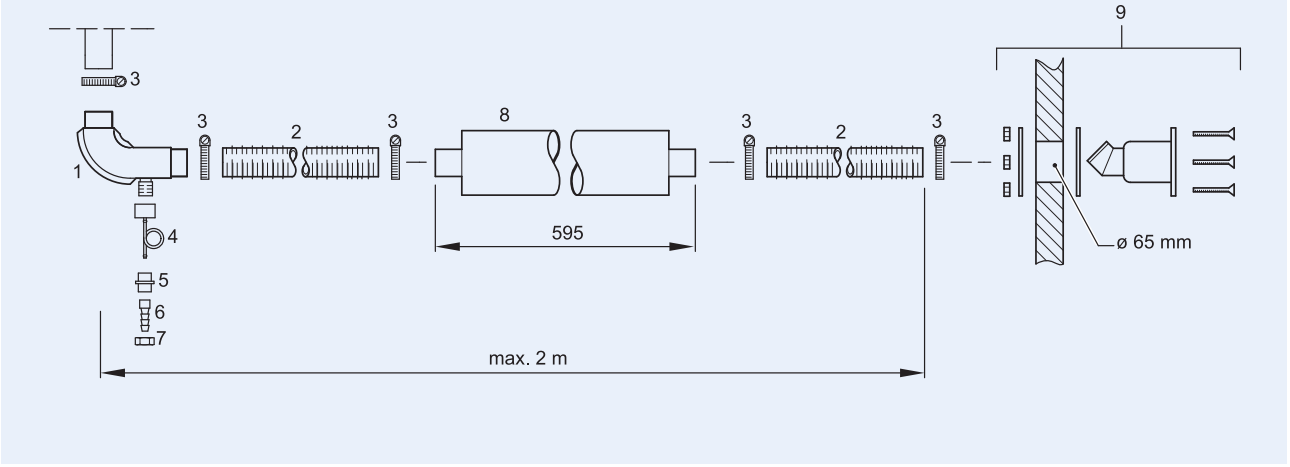
Air heater D8LC

Parts for directing combustion air through ducts



No.	Name
1	Flexible tube ø 30 mm
2	Hose clamp
3	3 boat hull openings for combustion air

Parts for routing the exhaust



No.	Name
1	Exhaust elbow pipe ø 42/40 mm with drainage
2	Flexible spiral tube ø 40 mm
3	Pipe clamp
4	Condensate drain
5	Fitting

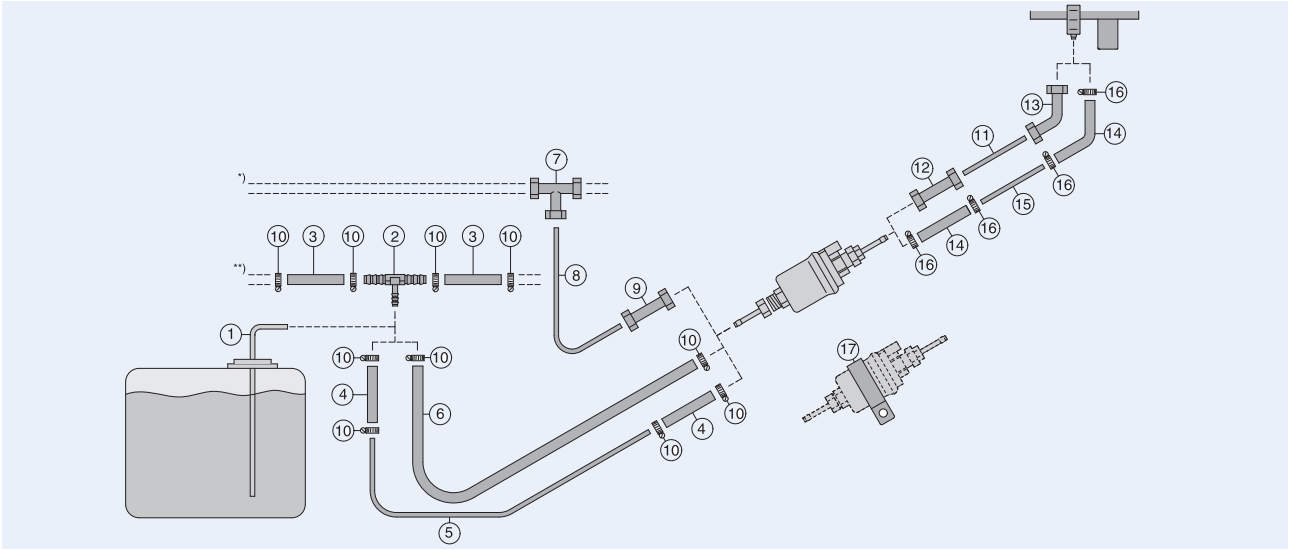
No.	Name
6	Hose nipple
7	Union nut
8	Exhaust muffler flexible
9	Opening in the boat hull

Fuel feed line

In most cases, it is recommended that the fuel be drawn through a separate tank connection and that it be installed in the fuel tank (for metal tanks only). If installing a separate tank connection in the fuel tank is not an option, then fuel must be drawn through a T-fitting connection that is connected to the fuel supply line that runs from the fuel tank to the motor.

Please note!

- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Refer to the Accessory Parts Catalogue or to the appropriate replacement parts lists if you need more parts for the fuel supply.
- Fuel hoses in engine compartments must be fire-retardant in accordance with DIN EN ISO 7840.



Intake side

No.	Name
1	Tank connection i/d = ø 4 mm
2	T-fitting
	6 – 6 – 6
	8 – 6 – 8
	10 – 6 – 10
	2 – 6 – 12
3	Connecting hose
	ø 5x3 (for pipe 6x2)
	ø 7.5x2.5 (for pipe 8x2)
4	Connecting hose ø 5x3 (for pipe ø 6x1)
5	Plastic pipe ø 6x1
6	Fuel hose ø 5x3
7	Threaded connection T ø 6
8	Metal pipe Cu ø 6x1
9	Threaded connection ø 6
10	Hose clamp ø 11
11	Metal pipe 4x1
12	Threaded connection ø 4
13	Threaded 90°-angle connection ø 4
14	Connecting hose ø 3.5x3
	(for pipe 4x1, 25)

Pressure side

No.	Name
15	Plastic pipe 4x1.25
16	Hose clamp ø 9

Metering pump mount

18	Hanger assembly for the metering pump
19	Rubber mount for the metering pump

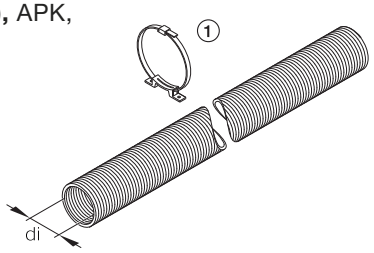
Fuel connection kit in accordance with DIN EN ISO 7840

or Fig.	Fuel connection kit for boats includes:
	2 fire-retardant hoses
	i/d = ø 3.5 mm, 50 mm long
	2 fire-retardant hoses,
	i/d = ø 5 mm, 50 mm long
	4 hose clamps, ø 12 mm
	4 hose clamps, ø 14 mm

Parts conducting air

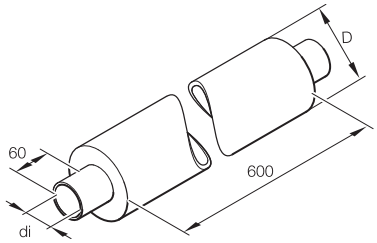
1. Flexible pipe (running meter), APK, heater air duct in the interior compartment

① Air hose attachment page 115



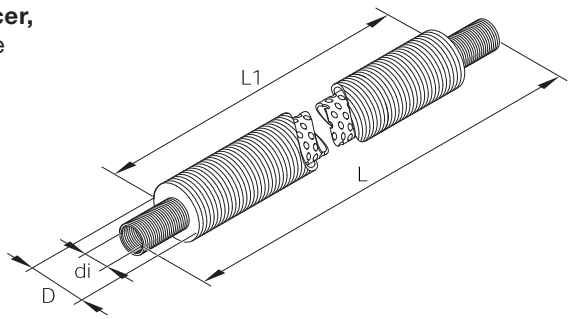
		Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
~ Check the connector diameter	i/d = ø 50 mm	~						10 2114 29 00 00
	i/d = ø 60 mm	■	~	~	~			10 2114 31 00 00
	i/d = ø 75 mm	■	~	~	~	~		10 2114 34 00 00
	i/d = ø 90 mm		■	■	■	■		10 2114 37 00 00
	i/d = ø 100 mm						■	10 2114 38 00 00

2. Silencer (alum.), heater air



		Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
~ Check the connector diameter	i/d = ø 75 mm, D = ø 120 mm	■	~	~	~			25 1226 89 15 00
	i/d = ø 90 mm, D = ø 140 mm		■	■	■	■		25 1226 89 17 00
	i/d = ø 100 mm, D = ø 150 mm		~	~	~	~		25 1226 89 56 00

3. Intake silencer, heater air intake

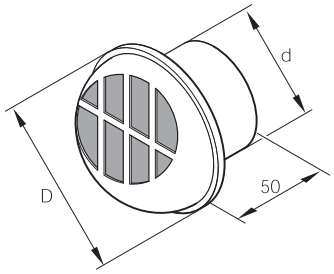


~ Check the connector diameter

	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
i/d = ø 75 mm, L = 600 mm, L1 = 300 mm, D = 110 mm	■	~	~	~			330 00 072

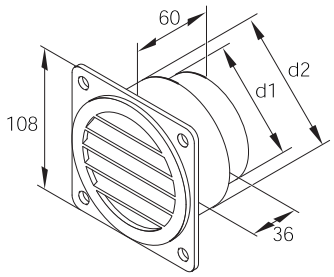
■ can be used without restrictions
~ with restrictions

4. Air vent
rotatable



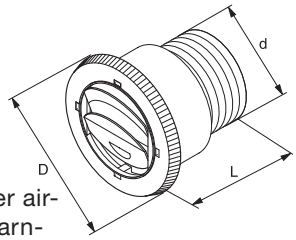
~ Check the connector diameter

5. Air vent
rotatable



~ Check the connector diameter
* incl. assembly bolts

6. Round nozzle
can be closed off, bladed shutter



~ Can only be used with dual-duct heater air-duct; do not exceed the main wiring harness's Component rating

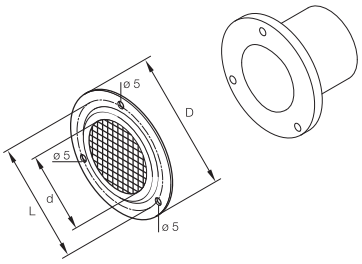
	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
d = ø 60 mm, D = ø 97 mm black	■	~	~	~			20 1577 89 06 00
d1 = ø 60 mm, d2 = ø 100 mm black	■						22 1000 01 07 00
d1 = ø 75 mm, d2 = ø 100 mm black	■	~	~	~	~		22 1050 89 21 00
d1 = ø 90 mm, d2 = ø 100 mm black		■	■	■	■	■	20 1609 80 09 00
d1 = ø 60 mm, d2 = ø 100 mm white*	■						22 1000 01 11 00
d1 = ø 75 mm, d2 = ø 100 mm white*	■	~	~	~	~		22 1000 01 12 00
d1 = ø 90 mm, d2 = ø 100 mm white*		■	■	■	■	■	22 1000 01 13 00
D = 100 mm d = 60 mm L = 63 black	■						330 31 313
D = 100 mm d = 75 mm L = 50 black	■	~	~	~			330 31 311
D = 120 mm d = 90 mm L = 62 black		■	■	■	■	~	330 31 315
D = 100 mm d = 60 mm L = 63 white	■						330 31 314
D = 100 mm d = 75 mm L = 50 white	■	~	~	~			330 31 312
D = 120 mm d = 90 mm L = 62 white		■	■	■	■	~	330 31 316

■ can be used without restrictions
~ with restrictions

Parts conducting air

7. Grille

Can be combined
with item 8, 10-12

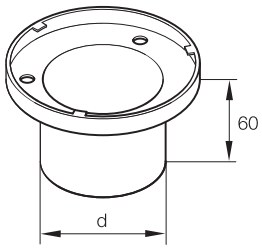


	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
D = ø 93 mm, L = ø 75, d = 60 mm plastic, black	■						22 1000 01 00 01
D = ø 132 mm, L = ø 120, d = 95 mm vernickelt	■	■	■	■	■	■	25 1226 89 05 00
D = ø 132 mm, L = ø 120, d = 100 mm plastic, black	■	■	■	■	■	■	25 1729 89 00 05

8. Fitting
for rotatable air vent

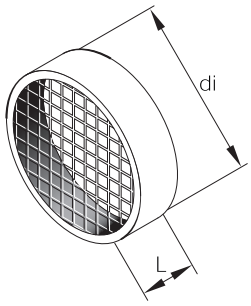
Can be combined with item 7

~ Check the connector diameter



	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
d = ø 75 mm	■	~	~	~	~		25 1794 80 00 01
d = ø 90 mm		■	■	■	■		25 1729 89 00 01

9. Grille for heater
black



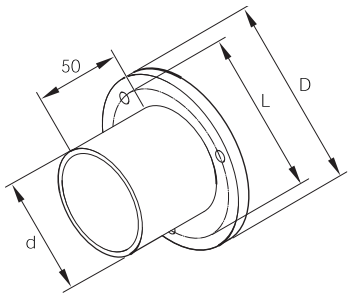
~ Check the connector diameter

	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
i/d = ø 60 mm, L = 20 mm, black	■						25 1688 80 06 00
i/d = ø 75 mm, L = 22 mm, black	■	■	■	■			25 1552 05 01 00
i/d = ø 90 mm, L = 24 mm, black		■	■	■	■		25 1729 80 00 01
i/d = ø 100 mm, L = 22 mm, black						■	25 1226 89 44 00

■ can be used without restrictions
~ with restrictions

10. Hose fitting

Can be combined with item 7

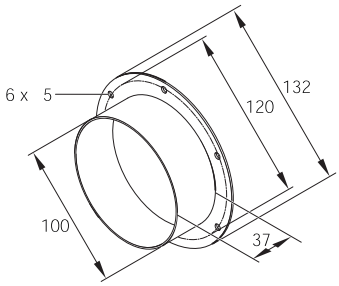


		Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
~ Check the connector diameter	d = ø 50 mm, D = ø 97 mm, L = ø 75	~						20 1575 80 08 01
	d = ø 60 mm, D = ø 97 mm, L = ø 75	■	~	~	~			20 1577 89 06 01

11. Hose fitting

Metal

Can be combined with item 7

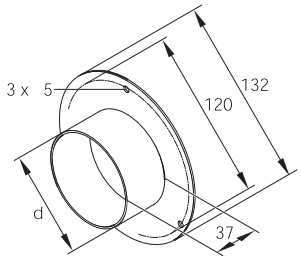


~ Check the connector diameter			~	~	~	~	■	251226 89 00 40

12. Hose Fitting Metal

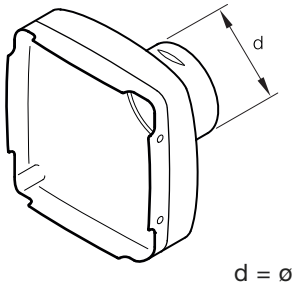
Metal

Can be combined with item 7



	d = ø 75 mm	■	~	~	~	~		25 1226 89 00 12
~ Check the connector diameter	d = ø 90 mm		■	■	■	■		20 1297 00 00 01

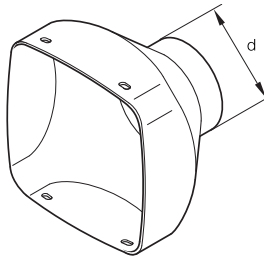
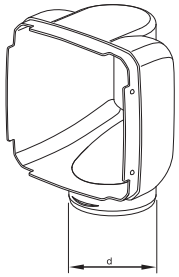
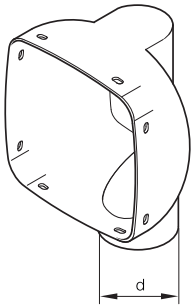
13. Hood



	d = ø 60 mm	■						22 1000 01 00 16
	d = ø 75 mm	■						22 1000 01 00 17
	d = ø 75 mm		■	■	■			22 1000 01 00 18
	d = ø 90 mm		■	■	■			22 1000 01 00 19

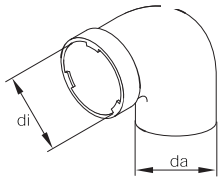
■ can be used without restrictions
~ with restrictions

Parts conducting air

		Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
14. Hood								
	d = ø 90 mm					■		25 1729 01 09 00
15. Swiveling hood								
	d = ø 60 mm	■						22 1000 01 00 20
	d = ø 75 mm	■						22 1000 01 00 28
	d = ø 75 mm		■	■				22 1000 01 00 22
	d = ø 90 mm		■	■				22 1000 01 00 23
16. Swiveling hood								
	d = ø 90 mm					■		25 1729 89 10 00

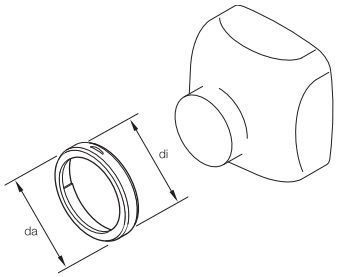
■ can be used without restrictions
~ with restrictions

17. Elbow pipe, 90°



		Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
~ Check the connector diameter	i/d = ø 60 mm, o/d = ø 60 mm	■						25 1688 89 00 01
	i/d = ø 75 mm, o/d = ø 75 mm		~	~	~			25 1482 89 00 05

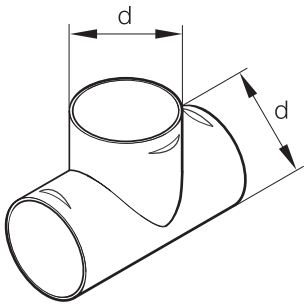
18. Ring



		Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
~ Check the connector diameter	i/d = ø 60 mm, o/d = ø 75 mm	■						22 1000 01 00 08
	i/d = ø 75 mm, o/d = ø 90 mm	■	~	~	~			25 1822 89 00 01
	i/d = ø 90 mm, o/d = ø 100 mm		■	■	■	■		25 1729 80 00 01

19. T-fitting

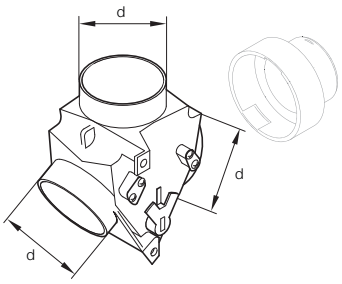
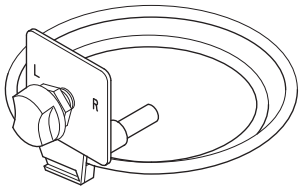
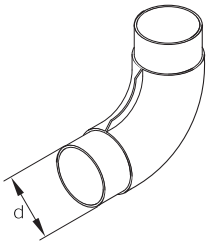
Can be combined with item 1



		Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
~ Check the connector diameter	d = ø 50 mm, metal	~						20 1575 89 18 00
	d = ø 60 mm, plastic	■						25 1688 89 00 02
	d = ø 75 mm, plastic	■						22 1000 01 00 27
	d = ø 90 mm, plastic		■	■	■	■		22 1000 01 00 26
	d = ø 100 mm, metal						■	20 1667 89 03 00

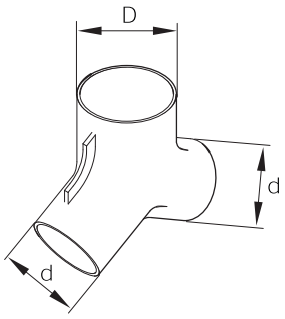
■ can be used without restrictions
~ with restrictions

Parts conducting air

		Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
20. Control flap								
Can be combined with item 1, 26, 27 with ø 75mm and ø 100mm								
								
~ Check the connector diameter	d = ø 60 mm	■						330 00 174
	d = ø 90 mm		■	■	■	■		330 00 175
21. Control unit for control flap								
Can be combined with item 20								
								
	2 m long	■	■	■	■	■		22 1000 01 03 00
22. Elbow pipe Metal								
								
	d = ø 75 mm	■	~	~	~			25 1226 89 36 00
~ Check the connector diameter								

■ can be used without restrictions
~ with restrictions

23. Y-branch
Symmetrical

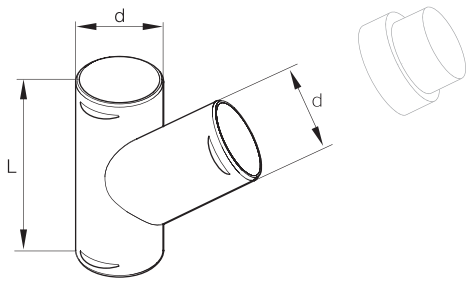


~ Check the connector diameter

	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
D = ø 60 mm, d = ø 50 mm Plastic	■						25 1688 89 00 03
D = ø 75 mm, d = ø 50 mm Metal	■	~	~	~	~		25 1482 80 08 00

24. Y-branch

Can be combined with item 1, 26, 27, 28

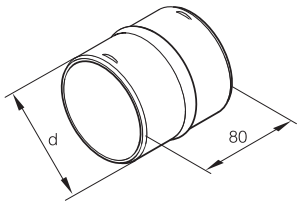


~ Check the connector diameter

	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
d = ø 60, L = 145 mm	■						25 1774 89 00 05
d = ø 75, L = 175 mm	■	~					25 1226 89 00 44
d = ø 90, L = 180 mm		■	■	■	■		22 1000 01 00 21
d = ø 100, L = 230 mm						■	25 1226 89 00 45

25. Hose connection fitting

Can be combined with item 1, 26



~ Check the connector diameter

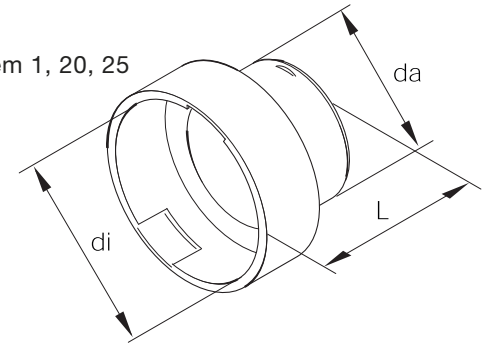
	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
d = ø 60 mm	■						22 1000 01 00 05
d = ø 75 mm	■	~	~	~	~	~	22 1000 01 00 06
d = ø 90 mm	~	■	■	■	~	~	22 1000 01 00 24
d = ø 100 mm		~	~	~	~	■	22 1000 01 00 07

■ can be used without restrictions
~ with restrictions

Parts conducting air

26. Reduction fitting

Can be combined with item 1, 20, 25

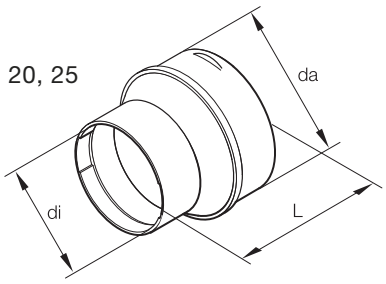


~ Check the connector diameter

	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
i/d = ø 75 mm, o/d = ø 50 mm, L = 50 mm		~	~	~	~		25 1226 89 00 46
i/d = ø 75 mm, o/d = ø 60 mm, L = 45 mm	■	~	~	~	~		25 1226 89 00 50
i/d = ø 90 mm, o/d = ø 75 mm, L = 45 mm		■	■	■	■	■	22 1000 01 00 12
i/d = ø 100 mm, o/d = ø 50 mm, L = 62 mm						~	25 1226 89 00 48
i/d = ø 100 mm, o/d = ø 60 mm, L = 57 mm						■	25 1226 89 00 51
i/d = ø 100 mm, o/d = ø 75 mm, L = 50 mm						■	25 1226 89 00 47
i/d = ø 100 mm, o/d = ø 90 mm, L = 42 mm						■	25 1226 89 00 49

27. Reduction fitting

Can be combined with item 1, 20, 25

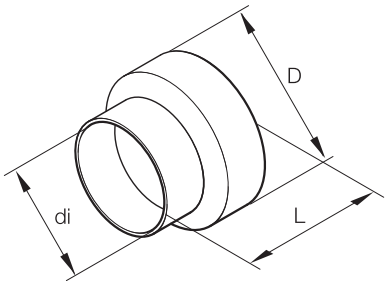


~ Check the connector diameter

	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
i/d = ø 60 mm, o/d = ø 75 mm, L = 40,5 mm	■						25 1688 89 00 10

28. Reduction fitting

Can be combined with item 1



	Airtronic D2	Airtronic D3	Airtronic D4	Airtronic D4 Plus	Airtronic D5	D 8LC	Order no.
i/d = ø 90 mm, D = ø 100 mm, L = 46 mm		■	■	■	■	~	20 1462 89 00 01

■ can be used without restrictions
~ with restrictions

Notes

The water-heating system — cosy comfort from bow to stern

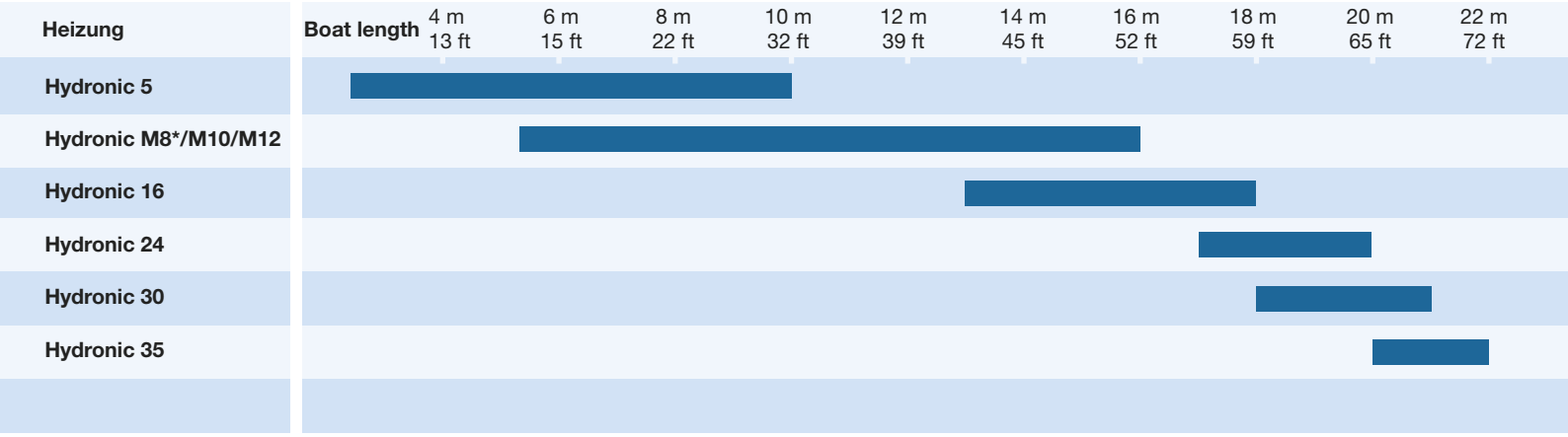
The benefit of a water-heating system is that in addition to heating all of the interior spaces on your yacht, you can also heat your tap water and preheat your engine.

Eberspächer offers water-heating units that produce 5,000 to 35,000 watts of heat.

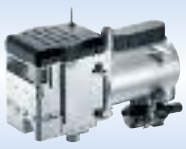
The right water heating system for every need

Eberspächer upholds the following principle for water heating systems: the right system for every type of boat — in just the right size and with optimal performance numbers. This means that Eberspächer has heaters from 5,000 to 35,000 watts of heat output for boats up to 22 meters long. Select the heater that's right for you — and let a specialist boat shop install it for you.

Selection guide



Hydronic technical data

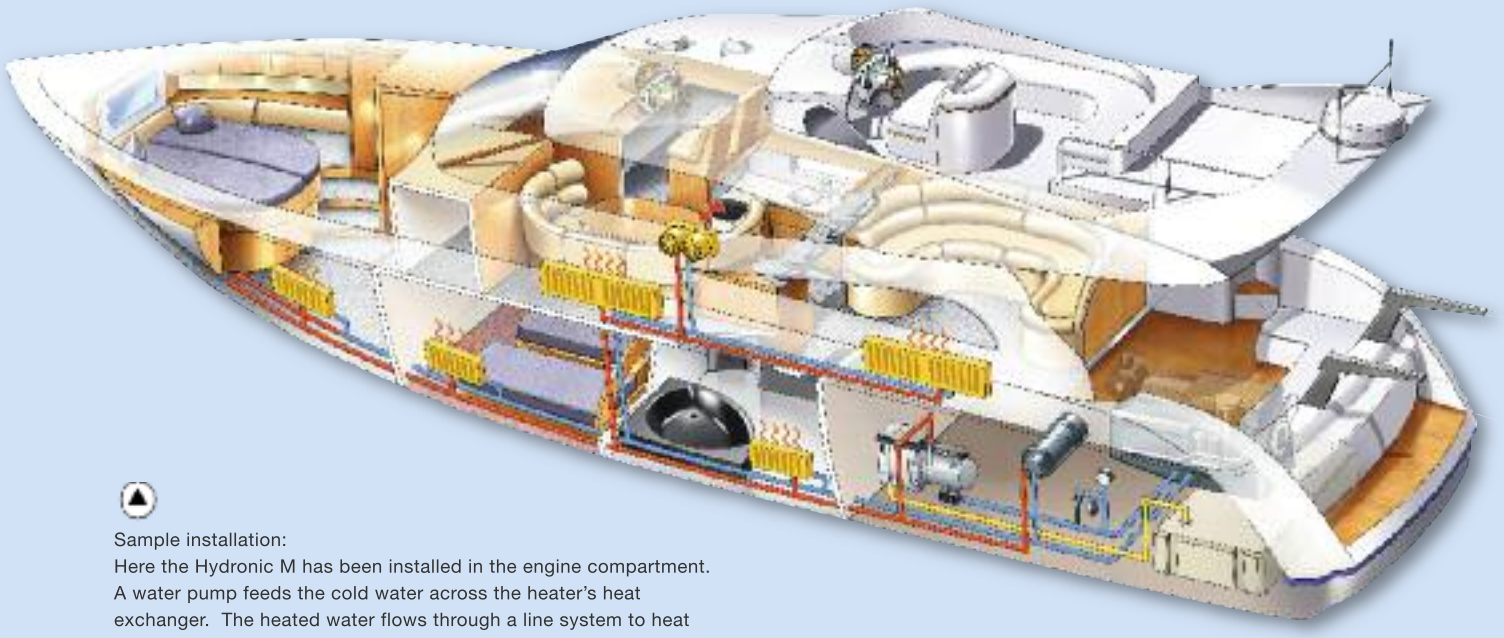


Diesel version	Hydronic 5	Hydronic M8*	Hydronic M10	Hydronic M12	Hydronic 16	Hydronic 24	Hydronic 30	Hydronic 35
Voltage (Volt)	12 / 24	12 / 24	12 / 24	12 / 24	24	24	24	24
Heat output (watts)	2,400 / 5,000	1,500 / 3,500 / 5,000 / 8,000	1,500 / 3,500 / 8,000 / 9,500	1,200 / 1,500 / 3,500 / 5,000 / 9,500 / 12,000	16,000	24,000	30,000	35,000
Electrical power operation (watts)	10 / 37	35 / 39 / 46 / 55	35 / 39 / 60 / 86	34 / 35 / 39 / 46 / 86 / 132	60	80	105	120
Fuel consumption (l/h)	0.27 / 0.62	0.18 / 0.40 / 0.65 / 0.90	0.18 / 0.40 / 0.90 / 1.20	0.15 / 0.18 / 0.40 / 0.65 / 1.20 / 1.50	2	2.9	3.65	4.2
Dimensions L x W x H (mm)	220 x 86 x 102	331 x 138 x 174	331 x 138 x 174	331 x 138 x 174	600 x 230 x 222	600 x 230 x 222	600 x 230 x 222	600 x 230 x 222
Weight (kg)	2.3	6.2	6.2	6.2	18	18	18	18

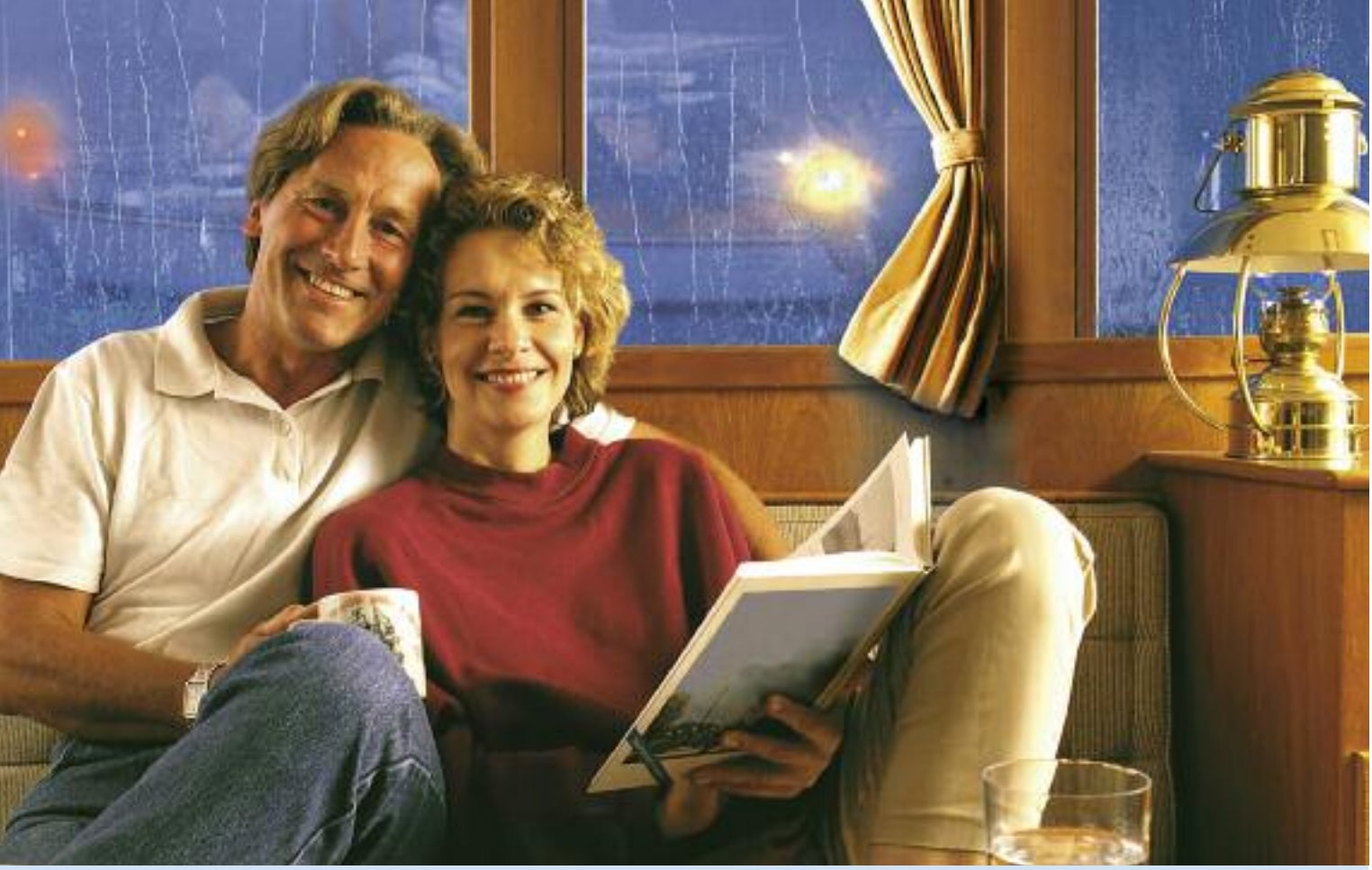
* 100% bio diesel compatible.

The benefits of Eberspächer heater systems:

- More uniform heat output
- Individual temperature adjustment for every flat panel radiator
- No blower noises from flat panel radiators
- Wash water can be heated
- Flexible installation:
  - Can be installed in the engine compartment
  - Small-dimensioned pipelines
  - Needs-driven heat output: either via the flat panel radiators or the blower heat exchangers
- The engine can be preheated
- Maintenance-free and user friendly



Sample installation:
Here the Hydronic M has been installed in the engine compartment. A water pump feeds the cold water across the heater's heat exchanger. The heated water flows through a line system to heat each of the individual spaces by means of convectors, radiators and flat panel radiators. A connected boiler can provide water for showering and tap water in the galley.



System accessories for your complete, customised solutions:

Eberspächer offers a wide range of premium accessories that are coordinated to complement each other, and which will meet all the particular requirements for use on smaller boats and seaworthy yachts. You will find all of these parts in the marine catalogue starting on page 88.

Control devices

EasyStart T Timer

- For assembly in an interior space
- Innovative, intuitive menu prompts using the menu bar
- 3 heater start times that can be programmed within a seven-day period

EasyStart R remote-control operation

- Base model, can be combined with the EasyStart T or mini-controller
- Includes feedback on heater function

EasyStart R⁺ remote-control operation

- Comfort version
- Alle Funktionen der EasyStart T inklusive
- Includes feedback on heater function

Telephone remote-control Calltronic*

- GSM module with voice chip
- You can operate the stationary heater by calling from your cell phone or from your landline (tone dial).

* Available for 12-volt heaters only.

General information on water heater systems in boats

Without a doubt, it's a good thing for the skipper to outfit his boat with a heater system. The more and longer a boat is used, the more you need a water heater system.

Benefits:

- Uniform heat output, infinitely variable control, low noise level
- Can be combined with your existing water circulation as long as you have a two-circuit cooling system for the engine. This allows the waste heat from the engine to be used for heating as well and conversely, for preheating the engine.
- Wash water can be heated.
- Heat is transported through lines whose diameter is much smaller than air ducts.
- Just as much comfort as with central heating.

Disadvantages of heating with water:

- The heater takes up valuable space in the cabin.
- Slow to heat up.
- Low drying effect on the air in the compartment.
- In certain situations, an additional blower heater is required for fresh-air operation.

The most convenient installation location

In most situations, water heaters are installed in the engine compartment. This is where the heater for washing water is also located (the boiler). Mandatory safety devices (such as the pressure-equaliser tank, safety valve, manometer, float vent valve, drain cock, and the tap cock for filling) can also be housed here.

Before we get to the installation of a water heater system, we first have to go over a few fundamental points:

- Heat requirements? This tells you the size of heater you need.
- How will the heater, boiler, heating element and, if required, the drive motor be connected to the network of pipes?
- Selecting and dimensioning the heating element.
- Dimensioning the network of pipes. Will the water pump's capacity be adequate?
- Can the drive motor be integrated in the water circulation system? (This is only possible with a dual-circuit cooling system)

In general, these points should be kept in mind. The answers to these questions, however, will determine how much time and expense you will need to invest, depending on whether motorboats (up to approx. 12 m) or larger cruising yachts need to be heated. And why make it any more complicated than it needs to be?

Heat requirements

The most expensive things involved in determining heating needs can be figured into the calculations: including the size of the rooms, the material in the walls, the inside, outside and glass surfaces, and taking into account where you like to go boating and the length of the season.
But that's only worth it for large cruising yachts. It's much simpler in most cases for motor boats.

The main factor is the length of the boat!

Since heaters do not come in infinite gradations of heat output capacities, there is a limit as to what you can select from. You would have to select the next larger heater in a borderline situation between two heaters and be certain that you can effectively control the heat flow.

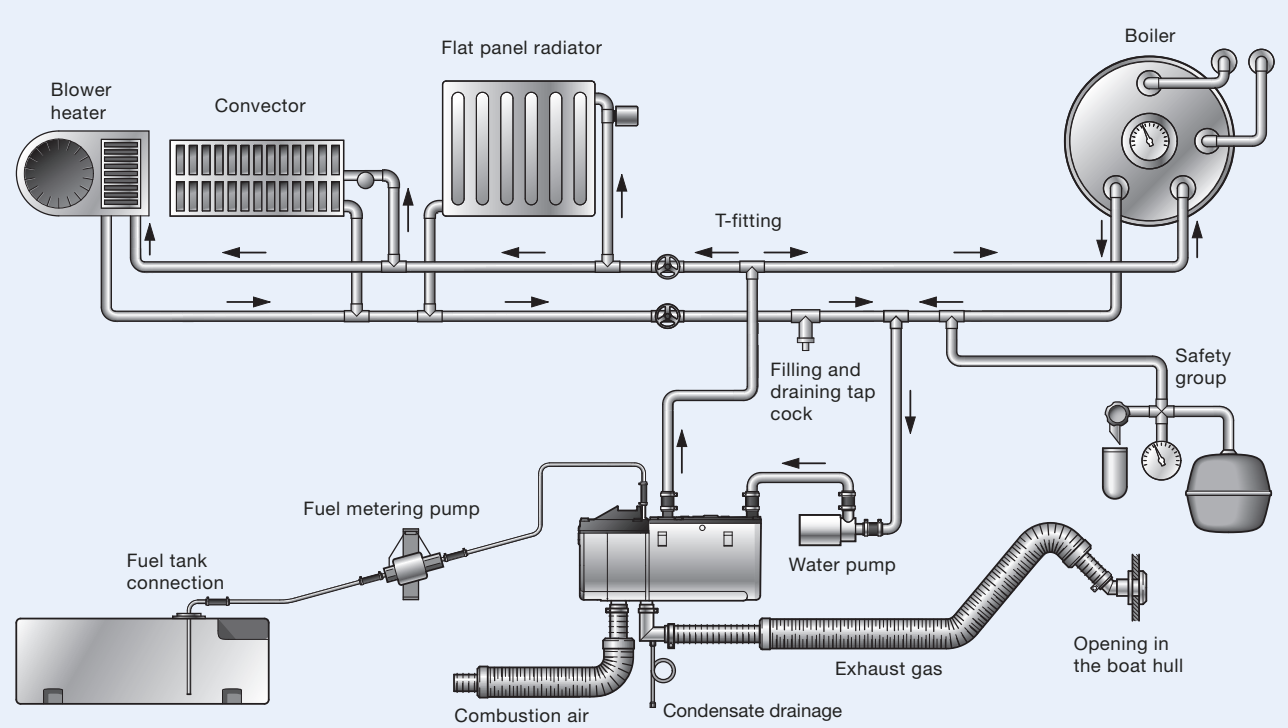
The following might serve as examples to apply to your own needs:

Sailing yachts and motor boats up to
- Max. length of 10m – Hydronic D5W S
- Max. length of 16m – Hydronic M

But heating needs should be calculated even more precisely for even larger yachts. This is a matter for the heating expert!

The following heaters are available for you to select from:
- Hydronic 24 with 24000 watts
- Hydronic 30 with 30000 watts
- Hydronic 35 with 35000 watts

Water circulation system



There are various options for connecting the boiler and the heating elements.
The simplest option is to operate the boiler and the heating elements in parallel as shown in the diagram. The water flows from the heater to the T-fitting, at which point the water divides to flow into both the boiler and the heating elements. The water is collected in the return line and flows back to the heater = a dual line system (supply line and return line).

The heater's large control range is especially valuable. If just the boiler is supposed to be heated, the heaters run on "low power" and switches to "high power" as soon as the heating elements are absorbing additional heat.

Since the boiler line is always open, a minimum amount of circulation is always ensured, even if the heating element valves have been severely throttled back because only a minimal amount of heat is needed at the time.

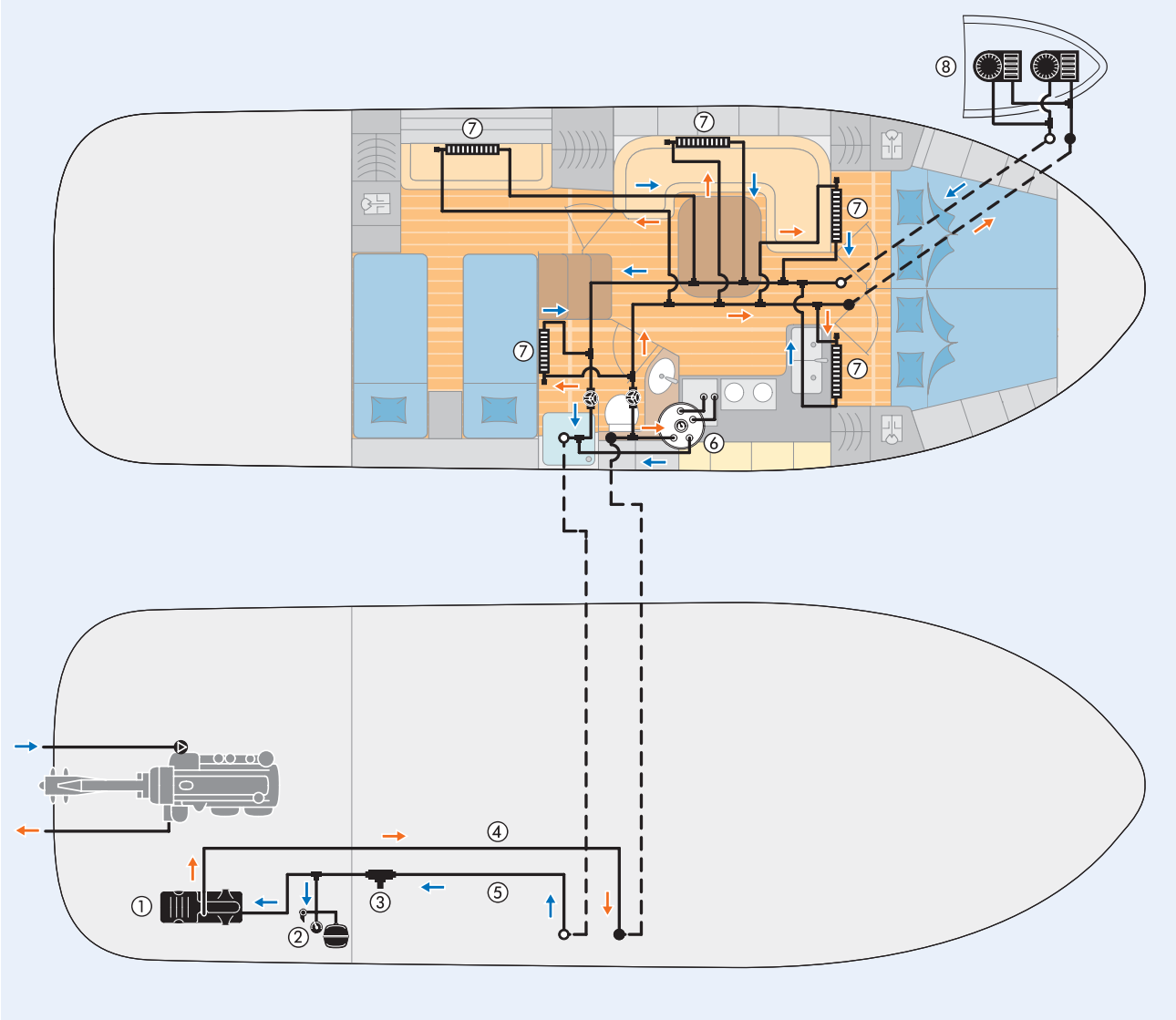
The diagram on page 70 shows how this simple system could be installed in a boat.

- The boilers used in sport boats have a thermal rating of between 1 and 2 kW.
  This is why setting the heater at full power is not an option for heating up just the boiler.

General information on water heater systems in boats

Sample installation:

Motor boat	10m long
Heat requirements	Approx. 10 kW
Heater	Hydronic M10



1	Heater
2	Safety group
3	Filling and drain cock
4	Supply line
5	Return line
6	Boiler
7	Flat panel radiator or convector
8	Blower heater in the steering stand

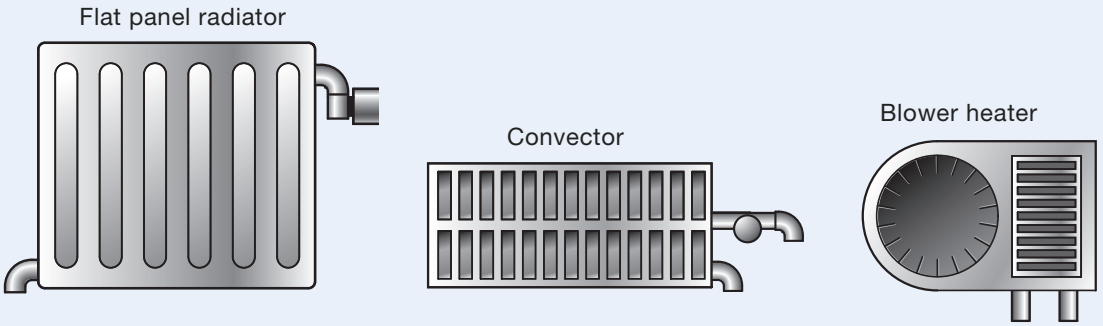
The drive motor could not be integrated in the heater circulation in this system since it has a single-circuit cooling, i.e. seawater flows directly through the engine's cooling ducts.

Therefore, it is not possible to use waste engine heat for heating or the water heater for engine preheating. But we will introduce you to this type of system later in this catalogue.

Selecting and dimensioning the heating element

When retrofitting, you have to work within the space available. Realistically, this means that only flat panel radiators or convectors can be used. Flat panel radiators are fairly lightweight and contain a smalll amount of water. Which is great for controlling it automatically. Attachment points should be available at all four corners for a smooth and trouble-free installation in boats.

Material: Stainless steel, aluminium or a nonferrous metal. Technical documents on heaters are available at specialty heater stores. If at all possible, a heater with blower should be installed. It needs the least amount of space, is the easiest to control automatically and dries out the air in the room. This is particularly important in the steering stand to keep the glass free of condensation.



Dimensioning the network of pipes

Maximum flow rate through the pipe network – including the boiler and heater – and its maximum drop in pressure are very important for dimensioning the network of pipes.

The heaters and water pumps have the following values:

Minimum heater water throughput		**Water throughput in the water pump**
Hydronic D 5W S.....300 l/h	12 V	800 l/h at 0.1 bar
	24 V	900 l/h at 0.1 bar
Hydronic M10..... 500 l/h		1400 l/h at 0.14 bar
Hydronic 24.....2000 l/h		5000 l/h at 0.2 bar
Hydronic 30.....2600 l/h		6000 l/h at 0.5 bar
Hydronic 35.....3500 l/h		6000 l/h at 0.5 bar

Using the intended pipe diameters of:
Hydronic D 5W S..... pipe 18 x 1 = inside ø 16 mm
Hydronic M10..... pipe 22 x 1 = inside ø 20 mm
Hydronic 24/30/35..... pipe 38 x 1.5 = inside ø 30 mm
yields a flow rate of < 1 m/s. To prevent noise created by water flowing through the pipes, do not exceed a 1 m/s flow rate.

For boats up to the 12m-size class, the pressure drop in the heater system will remain below the usable pressure at the heater's water pumps. To check this, measure the difference in temperature between the water outlet and inlet at the heater.

Under steady conditions and with the heater on "high," this difference should be no more than 11° C, maximum.
That will guarantee the minimum amount of circulation.

General information on water heater systems in boats

Let's take a moment to summarize:
A dual-line pipe system connects the heater, boiler and heating element (and drive motor, if required).

Dual-line means that there is a supply line that runs from the heater to the consumers, and a return line that runs from the consumers back to the heater.

The main pipe section for the
- Hydronic D5W S is routed using in ø 18 x 1
- Hydronic M10 at ø 22 x 1
- and for the Hydronic 24/30/35 at ø 38 x 1.5

The pipes branch to the heaters at a reduced diameter.

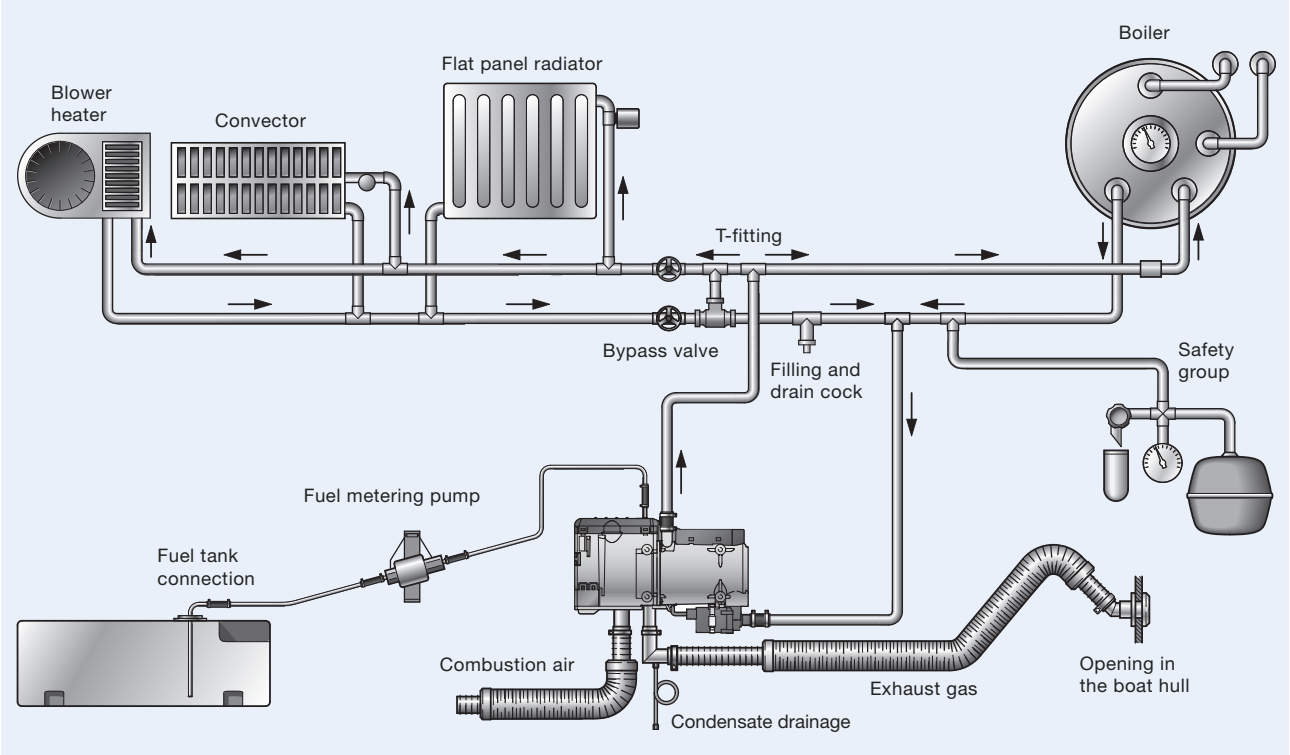
Heat output per Heater	ø	valve:
< 1,200 W	12 x 1	3/8“
< 2,400 W	15 x 1	3/8“
< 3,600 W	15 x 1	1/2“
< 5,000 W	18 x 1	1/2“
< 7,000 W	22 x 1	3/4“

Upgrading

We will upgrade the heater system in the next step. A thermostatic control valve is installed in the supply line to keep the storage tank water temperature at approx. 60° C (to guard against calcification). Once the set storage tank temperature has been reached, the valve closes off the heating water feed line.

But this also means that now there is no more automatic forced circulation through the boiler, and with the heater valves closed, there would not be any minimum amount circulating, either. An automatic bypass valve (e.g. OVENTROP) is therefore installed between the supply and return lines, which ensures forced circulation.

Water circulation using the control valve for the boiler and the bypass valve



Can the drive motor be integrated in the water circulation?

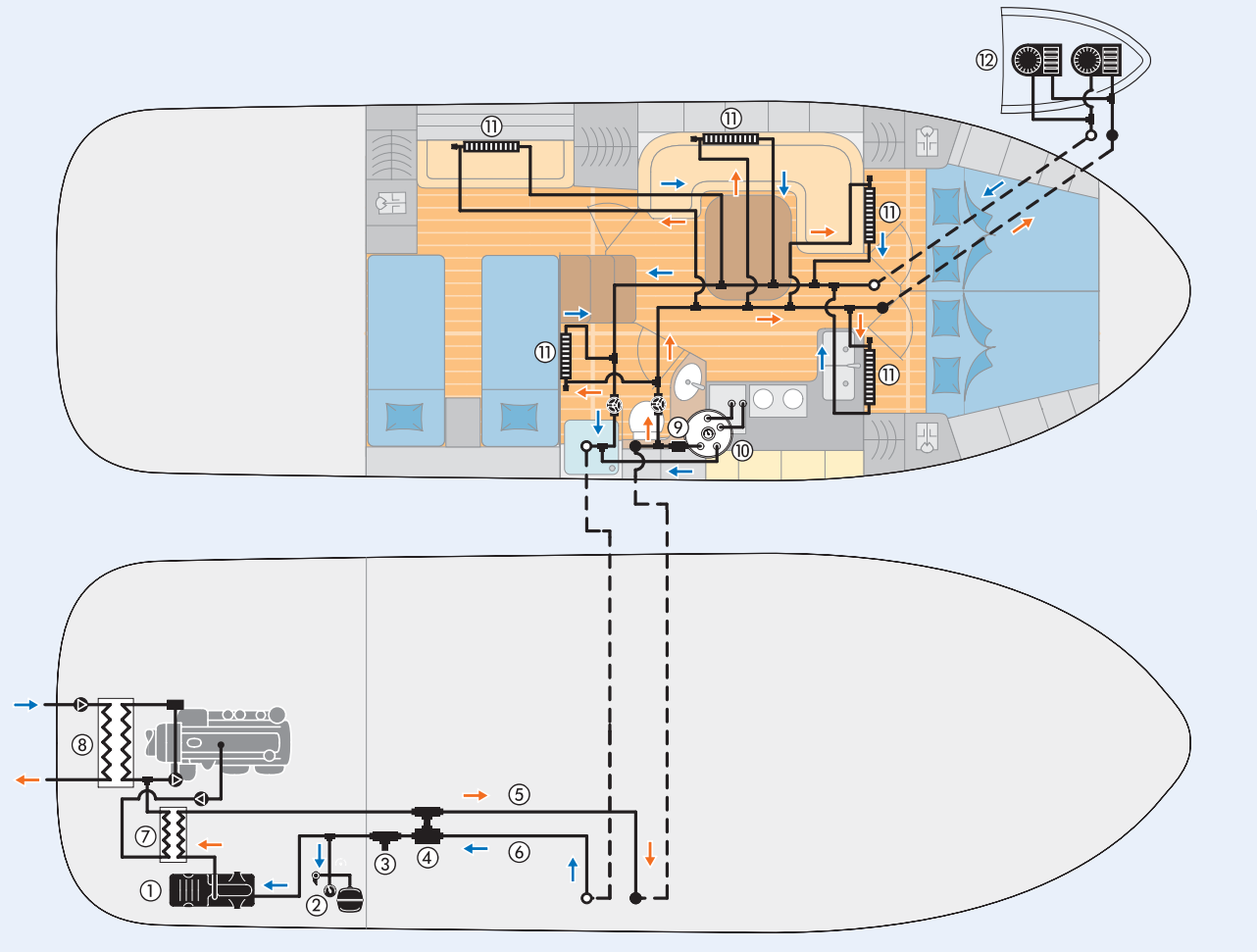
The following diagram shows a system in a motor yacht with dual-circulation cooling for the drive motor.

This heater system makes it possible to integrate the engine in the heater circulation, to use engine heat for heating, and use the heater to preheat the engine.

But this won't work in a single-circuit system where seawater flow directly through the engine. In the dual-circuit cooling system, the engine's cooling ducts are part of a closed cooling system where the cooling fluid circulates together with an anticorrosive. Cold seawater from the outer circuit is fed into a heat exchanger where it cools the water from the inner circulation. The seawater is then routed back into the sea, never coming into direct contact with the engine cooling ducts or the heater circulation.

Sample installation:

Motor boat	7m long	Motor	80 kW
Heat requirements	Approx. 8 kW	Heater	Hydronic M 8



1	Heater
2	Safety group
3	Filling and drain cock
4	Bypass valve
5	Supply line
6	Return line
7	Heat exchanger heater circulation heater/ engine cooling water circulation
8	Heat exchanger cooling water circulation Heater/seawater circulation
9	Thermostatic control valve
10	Boiler
11	Flat panel radiator or convector
12	Blower heat exchanger in the steering stand

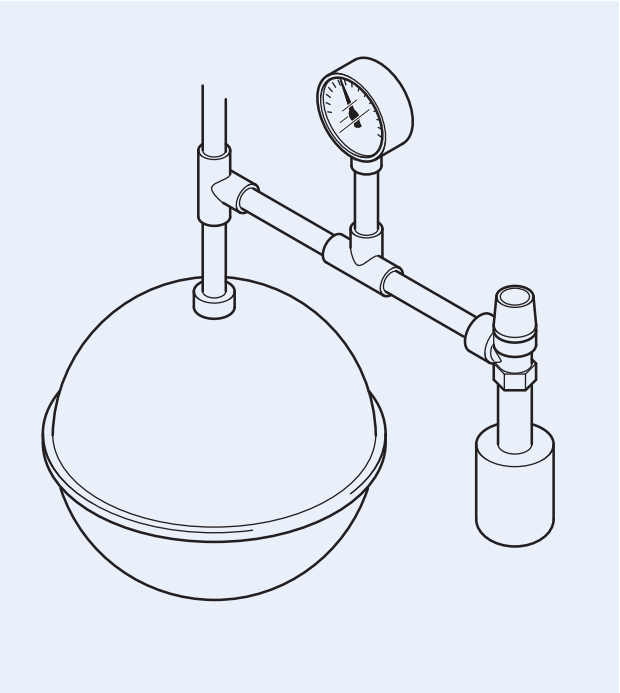
You must be absolutely sure that
The amount of heat the heater system draws must not be more than 10% of the engine output so that it does not cool off too much if engine coolant water is used for heating.

General information on water heater systems in boats

A couple more important tips:

Just as there are a couple of things to keep in mind with your central heating at home, there are also a few things to remember with boat heater systems, which are absolutely necessary for safety and reliable operation. Listed below are just a few of the parts indispensable to a complete system.

Pressure equalisation tank
Closed systems, such as we use, require a pressure equalisation tank.



Rule of thumb regarding size:
The pressure equalisation tank's usable volume = approx. 1 litre per kW of heat flow (heat output) from the heater when installed.

Which means that:
a Hydronic D 5WS heater system would be outfitted with a pressure equalisation tank of at least 5 l cubic capacity, and at least 7 l cubic capacity with the Hydronic M10 heater.

Safety valve
Reaction pressure: 2.5 bar.
Safety valves for closed systems must be type tested (the DIN DVGW registration number).

Manometer
Recommended for a quick survey of at pressure conditions in the system.
- Pressure equalisation tank, safety valve and manometer are conveninetly combined in a "**Safety group**" (available as a unit at heater speciality stores). Installed in the return hose before the intake side of the water pump.

Float vent valve
Installed in the return line after the outlet connection to the heater.

Water thermometer
A thermometer is used at each of the following places: after the heater's outlet connection in the supply line and in front of the heater's inlet connection in the return line.

Preventing corrosion
Oxygen in the heater system is dangerous. It causes corrosion. Especially if different kinds of materials are joined, e.g. a heater made of steel or aluminium and pipes made of copper. For this reason, only a closed system that is carefully ventilated should be considered. But all of that would be futile if we were to drain the system every winter and fill it with fresh water before the start of the new season. Therefore: even for boats that are not used all year round, leave the water in the heater system and add antifreeze (see General Assembly Instructions for Heaters).

Heat expansion
Pipes expand when heated. That's why they should not be mounted rigidly, but rather should be attached to points where they can move (e.g. a clamp with a rubber insert). Copper fittings to prevent too much heat expansion are also provided.

General
Instructions for installation, exhaust routing, fuel supply, electrical wiring and operation are found in the installation instructions that come with every heater.

Combustion air system

The combustion air must be drawn from a well-ventilated area at ambient air pressure (not from the cabin).
To run the heater in fresh-air mode, do not draw the combustion air from the same area.

There are two options for routing the combustion air system:

- If regulations apply similar to those for boating on Lake Constance, in Bavaria and in Sweden, for example, then combustion air must be drawn in from outside the boat.
  We sell an opening for the boat hull made of plastic as an accessory part.
  The opening for drawing in combustion air must be located where it will not pull in any exhaust (from the heater unit or the engine).

  The lines from the heater unit must be routed so that they run downward.
  A condensate opening must be installed at the lowest point for routing that does not slope.
  The combustion air hose must be routed at the end as a gooseneck.
  This lets any water that gets in drain out again.

Please note!

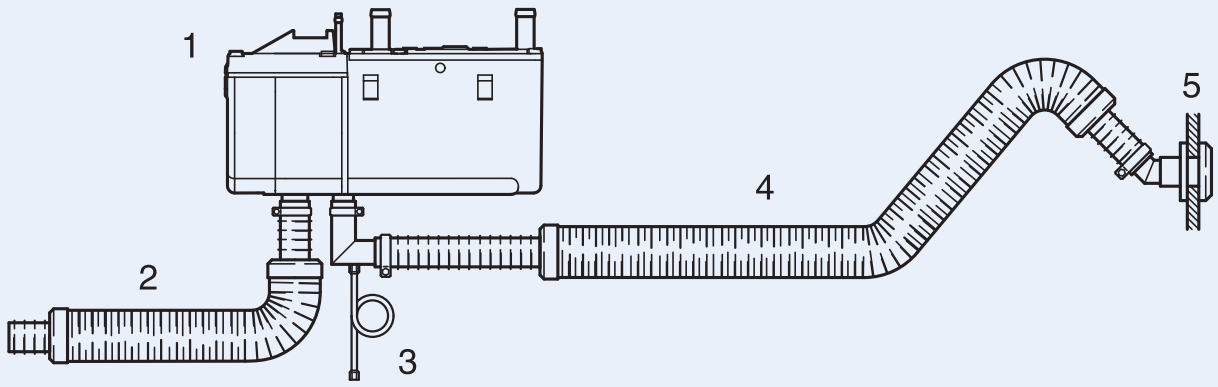
- When drawing combustion air from the engine compartment, make very sure that it is adequately ventilated and that ambient pressure does not change while the engine is running (e.g. due to the cooling fan blowing).

Exhaust gas routing

In sailboats, the exhaust gas routing exits at the transom, and in motor boats, through the side hull. The exhaust gas routing must be insulated so that the surface temperature does not exceed 80° C. Routing the exhaust gas through a cabin can only be done using a single-piece pipe made of stainless steel. Outside the cabin, a dual-layer, flexible exhaust pipe of stainless steel can be used. Preferably, the exhaust gas line should always be mounted so that, when installed, it is always dropping, so that condensate or surge water can drain away immediately. If a particular installation situation is awkward, a T-fitting that includes a condensate line can be used at the lowest point in the exhaust routing. The flexible exhaust pipe has to be routed at the end of the gooseneck so that any water getting in can run back out again.
An exhaust silencer that is positioned in the exhaust routing will contribute to a quieter atmosphere on board, and, depending on the type of heater installed, the silencer can be either rigid or flexible.

Please note!

- When routing the exhaust lines, make absolutely sure that all of the connections are properly and completely sealed. The gaskets in the boat hull's opening must fit exactly. Make sure that no hot pieces of metal touch the boat's hull while the exhaust routing is being laid and the opening in the boat hull is being installed. Minimum distance from the hull of 20 mm must absolutely be maintained if the exhaust gas lines are insulated.



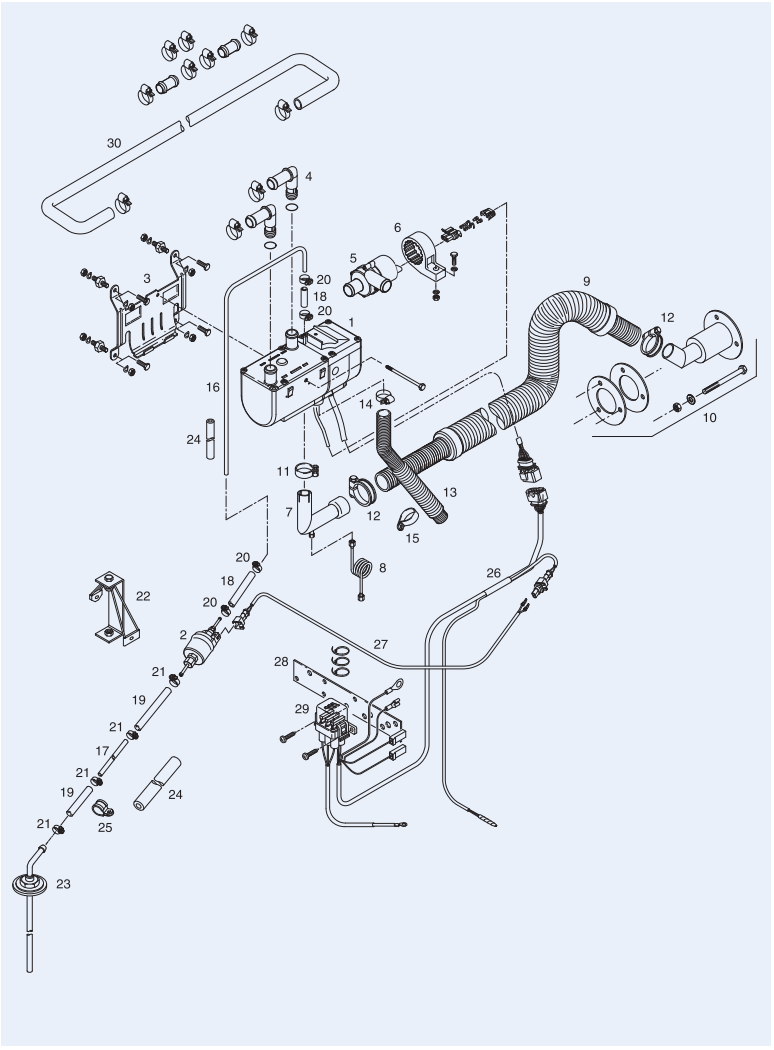
1	Heater
2	Silencer for combustion air
3	Condensate drain
4	Silencer exhaust
5	Opening in boat hull for the exhaust pipe

Hydronic 5

Technical data

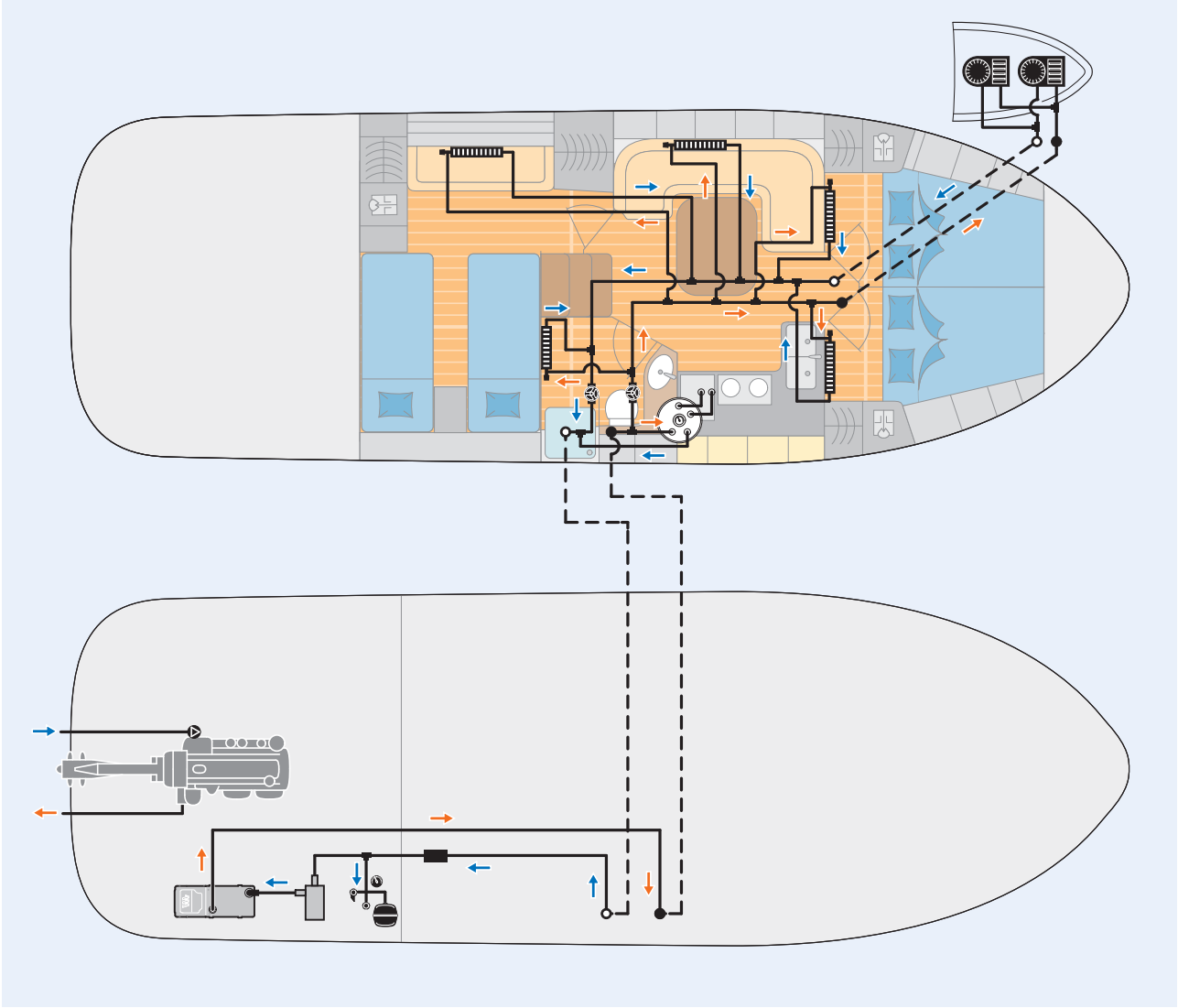
		Hydronic 5
Voltage	**V**	12/24
Heat output	**W**	2.400/5.000
Water throughput	**l/h**	900 ± 100 at 0.1 bar
Electrical power operation	**W**	10/37
Fuel consumption	**l/h**	0.27/0.62
Dimensions L x B x H	**mm**	220x86x98
Weight	**kg**	2.3

Parts required for installation



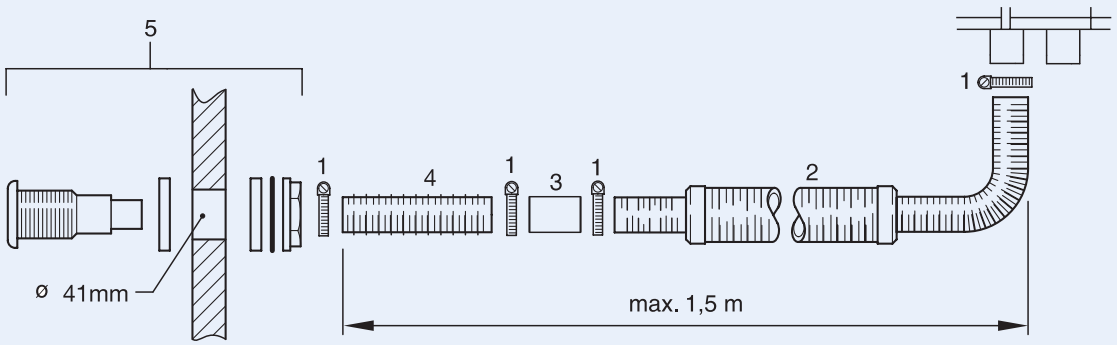
1	Hydronic D 5W S heater
2	Metering pump
3	Heater mounting bracket
4	Water connection, 90° angle
5	Water pump
6	Mounting bracket for water pump
7	Exhaust pipe elbow with drain, Ø 24/30
8	Condensate drain
9	Exhaust silencer
10	Boat hull opening
11	Pipe clamp
12	Pipe clamp, (2x)
13	Combustion air pipe
14	Hose clamp, Ø 20/32
15	Hose clamp, Ø 20
16	Pipe, 4 x 1.25
17	Pipe, 6 x 2, 1.5m long
18	Hose, 3.5 x 3, running meter
19	Hose, 5 x 3, running meter
20	Hose clamp, Ø 9, (4x)
21	Hose clamp, Ø 11, (4x)
22	Bracket for metering pump
23	Tank connection
24	Foam rubber hose
25	Pipe clamp, Ø 10
26	Wire harness
27	Cable harness, metering pump
28	Fuse holder bracket
29	Fuse bracket, three fuses
30	Water hose

	Item parts list	Order numbers starting on page
Heater scope of delivery		
Hydronic D 5WS heater	1-2	
Metering pump		
The following must also be ordered:		
Parts for routing water	4-5	88
Exhaust gas and combustion air system parts	7-14	98
Fasteners	3/15/22	114
Parts carrying fuel	16-21	106
Electrical parts	26-29	



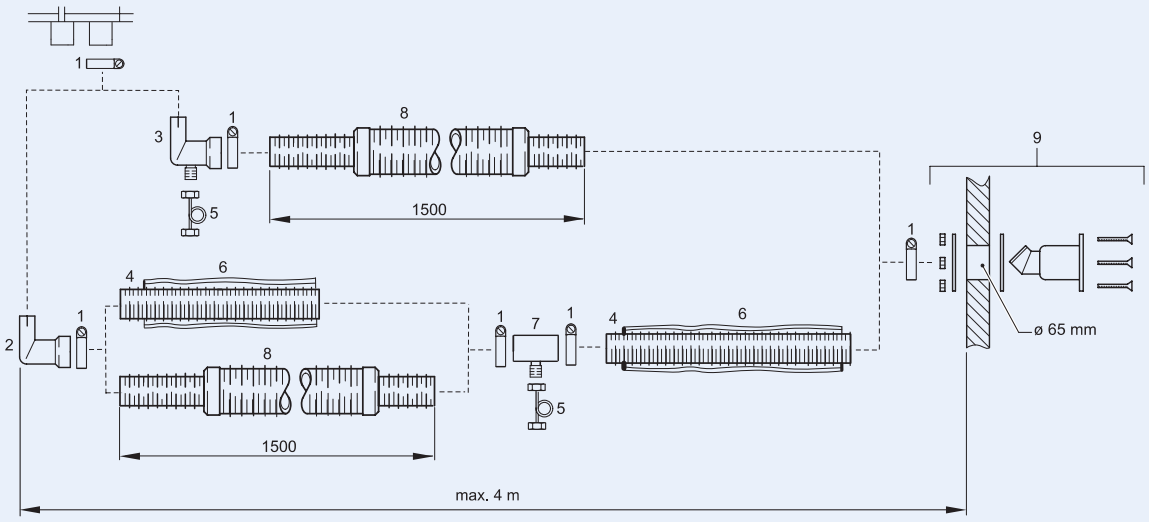
The ideal scenario for motor boats is to install the heater in the engine compartment. The combustion air is drawn from the engine compartment and the exhaust gases are fed to the outside through the opening in the boat hull. A water pump feeds the cold water across the heater's heat exchanger. The heated water flows through a line system to heat each of the individual spaces by means of convectors, radiators and flat panel radiators. A connected boiler can provide water for showering and tap water in the galley.

Parts for directing combustion air through ducts



No.	Name
1	Hose clamp
2	Silencer for combustion air
3	Hose connector pipe
4	Flexible pipe
5	Boat hull opening for combustion air

Parts for the exhaust system



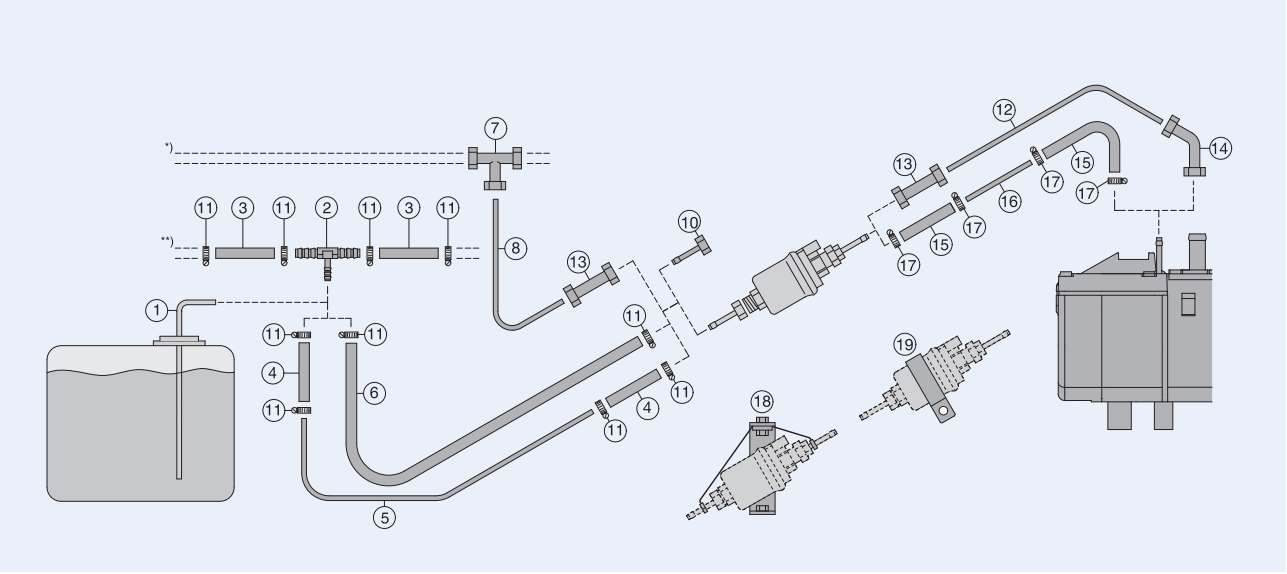
No.	Name
1	Pipe clamp
2	Exhaust pipe elbow ø 24/30 mm
3	Exhaust pipe elbow ø 24/30 mm with drainage
4	Flexible spiral pipe ø 30 mm
5	Condensate drain
6	Exhaust insulation
7	Connector ø 30 mm with drain
8	Exhaust silencer - flexible
9	Boat hull opening

Fuel supply

In most cases, a separate tank connection is recommended for the fuel pick-up, and this connection should be installed in the fuel tank (for metal tanks only). If installing a separate tank connection in the fuel tank is not an option, then fuel must be picked up through a T-fitting that is connected to the fuel supply line that runs from the fuel tank to the engine.

Please note!

- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Refer to the Accessory Parts Catalogue or to the appropriate replacement parts lists if you need more parts for the fuel supply.
- Fuel hoses in engine compartments must be fire-resistant in accordance with DIN EN ISO 7840.



No.	Name
1	Tank connection i/d = ø 2 mm
2	T junction
	6 – 6 – 6
	8 – 6 – 8
	10 – 6 – 10
	12 – 6 – 12
3	Connecting hose
	ø 5x3 (for pipe 6x2)
	ø 7.5x2.5 (for pipe 8x2)
4	Connection
	Reducer ø 5/3.5
	(for T-fitting and pipe 4x1)
	Hose ø 3.5x3 (for pipe 4x1)
	Hose ø 5x3 (for pipe 6x2)
5	Plastic pipe
	4x1
	6x2
6	Fuel hose 5x3
7	Threaded connection T ø 6
8	Metal pipe Cu 6x1
9	Threaded connection ø 6
10	Hose fitting ø 4
	(for metering pump for 4x1 pipe)

No.	Name
11	Hose clamps ø 11
12	Metal pipe 4x1
13	Threaded connection ø 4
14	Threaded angle connection ø 4
15	Connecting hose ø 3.5x3
	(for pipe 4x1, 25)
16	Plastic pipe 4x1.25
17	Hose clamp ø 9

Metering pump mount

18	Hanger for the metering pump
19	Rubber mountfor the metering pump

Fuel connection kit in accordance with DIN EN ISO 7840

or Fig.	Fuel connection kit for boats includes:
	Two fire- resistant hoses,
	i/d = ø 3.5 mm, 50 mm long
	Two fire- resistant hoses,
	i/d = ø 5 mm, 50 mm long
	4 hose clamps, ø 12 mm
	4 hose clamps, ø 14 mm

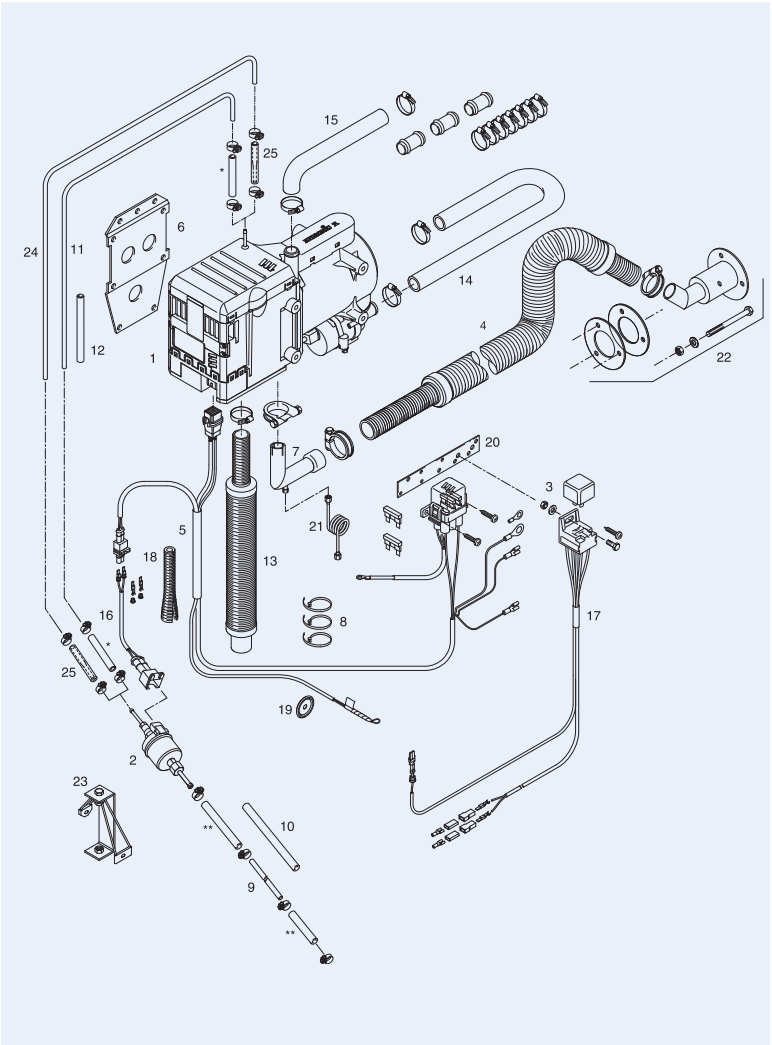
Hydronic M8 M10 M12

Technical data

		Hydronic M8*	Hydronic M10	Hydronic M12
Voltage	**V**	12/24	12/24	12/24
Heat output	**W**	1,500 - 8,000	1,500 - 9,500	1,200 - 12,000
Water throughput	**l/h**	1400 at 0.14 bar	1400 at 0.14 bar	1400 at 0.14 bar
Electrical power operation	**W**	35 - 55	35 - 86	34 - 132
Fuel consumption	**l/h**	0.18 - 0.90	0.18 - 1.20	0.15 - 1.50
Dimensions L x B x H	**mm**	331x138x174	331x138x174	331x138x174
Weight	**kg**	6.2	6.2	6.2

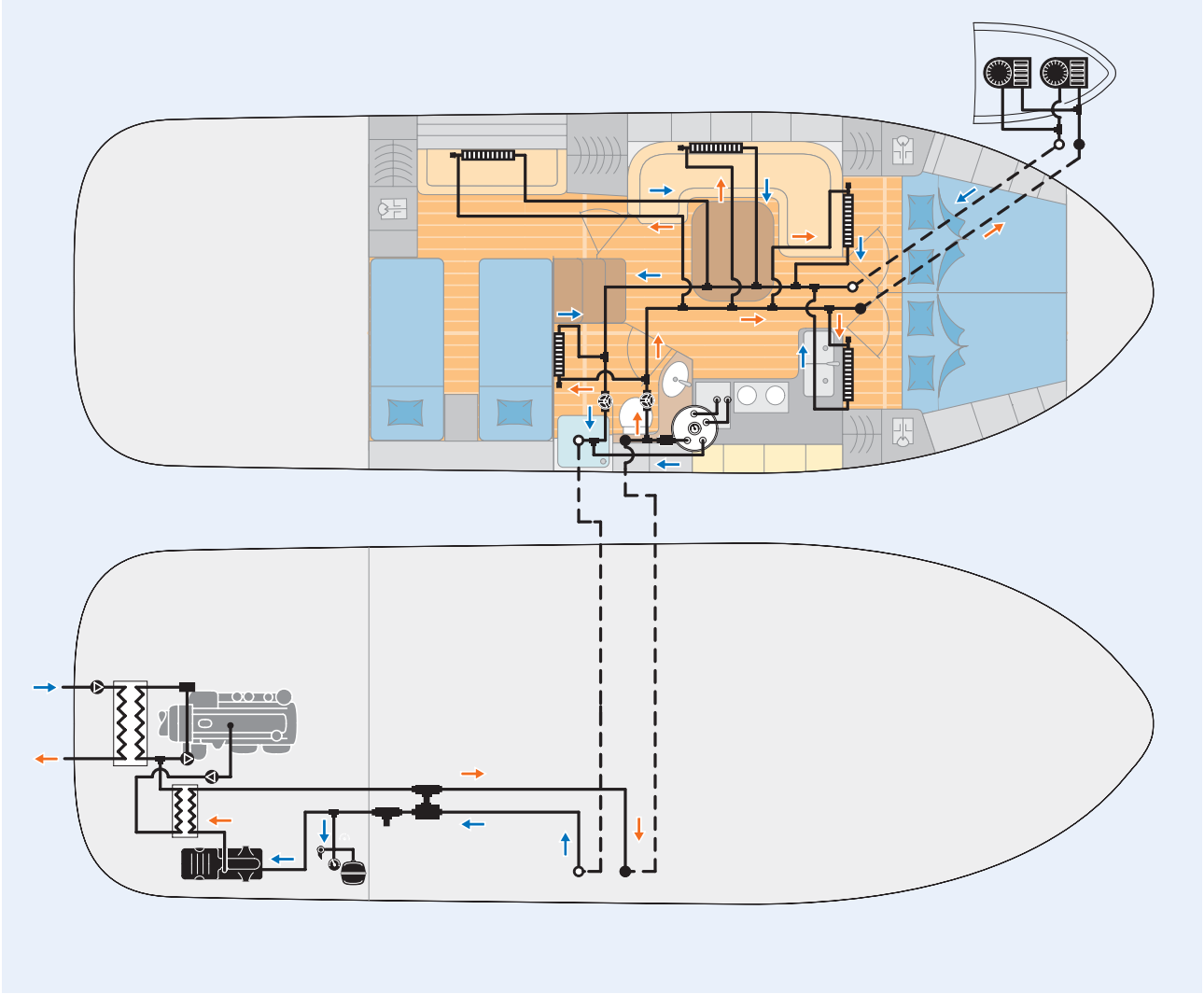
*100% bio diesel compatible

Parts required for installation



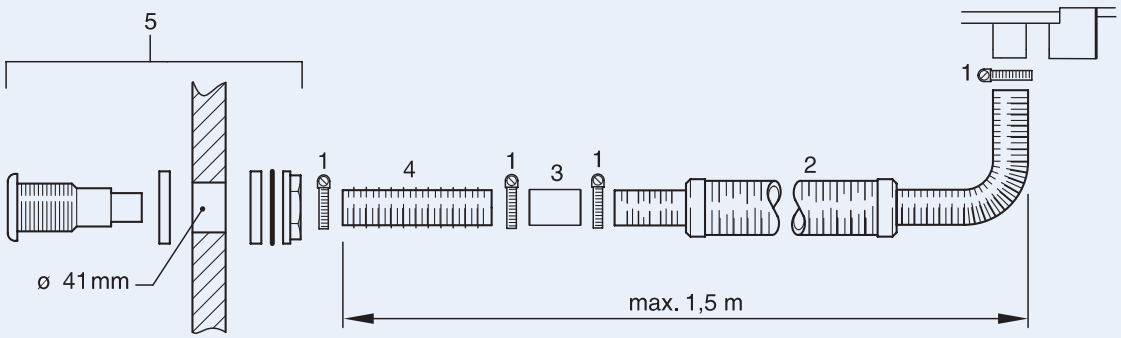
1	Heater
2	Metering pump
3	Relay 12V / 24V
4	Exhaust silencer
5	Wire harness, heater
6	Bracket, heater
7	Exhaust pipe elbow with drain, Ø 30
8	Cable tie (qty. 10)
9	Fuel line Ø 6x1, length: 1.5m
10	Hose Ø 5x3, length: 0.5m
11	Fuel line Ø 4x1, length: 6m
12	Hose Ø 3.5x3, length: 0.1m
13	Intake silencer for combustion air
14	Water hose
15	Water hose
16	Wire harness for metering pump
17	Wire harness for blower
18	Corrugated protective pipe, inside diam. 10mm, Length: 2m
19	Cable bushing
20	Bracket
21	Condensate drain
22	Boat hull opening Ø 30
23	Suspension, metering pump
24	Fuel pipe Ø 6x1, L= 6m (PME)
25	Transition piece Ø 3.5 / 5, 2 units
	- Small parts - Hose clamps Ø 10, 4 units

	Item parts list	Order numbers starting on page
Heater scope of delivery		
Hydronic M heater Metering pump	1-2	
The following must also be ordered:		
Parts for routing water	14-15	88
Exhaust gas and combustion air system parts	4/7/13/21/22	98
Fasteners	6/8/19/20/23	114
Parts carrying fuel	9-12/24-25	106
Electrical parts	3/5/16-18	



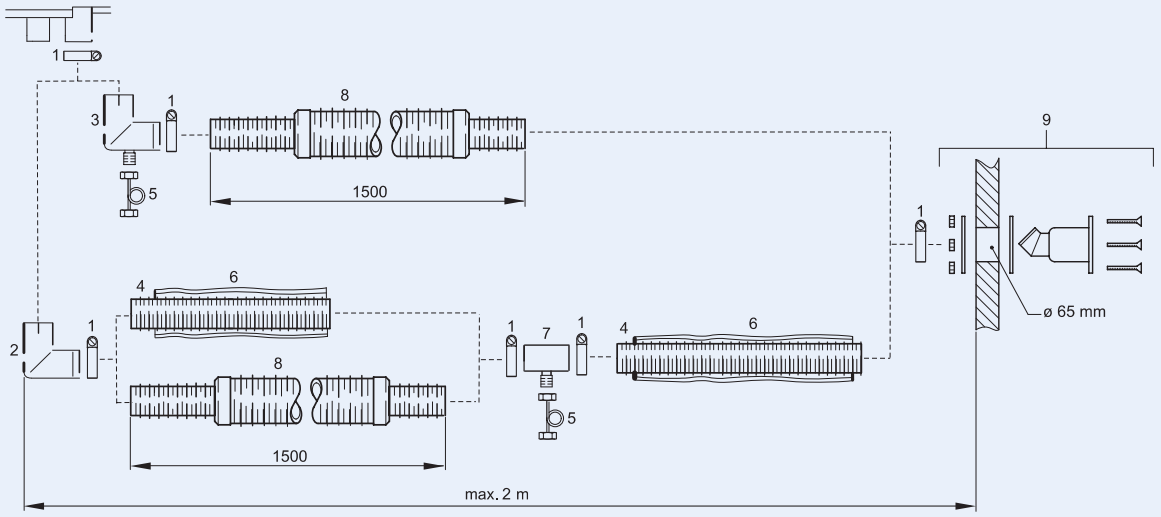
The ideal scenario for motor boats is to install the heater in the engine compartment. The combustion air is drawn from the engine compartment and the exhaust gases are fed to the outside through the opening in the boat hull. A water pump feeds the cold water across the heater's heat exchanger. The heated water flows through a line system to heat each of the individual spaces by means of convectors, radiators and flat panel radiators. A connected boiler can provide water for showering and tap water in the galley.

Parts for routing combustion air



No.	Name
1	Hose clamp
2	Silencer for combustion air
3	Hose connector pipe ø 25 mm
4	Flexible tube ø 25 mm
5	Boat hull opening for combustion air

Parts for the exhaust system



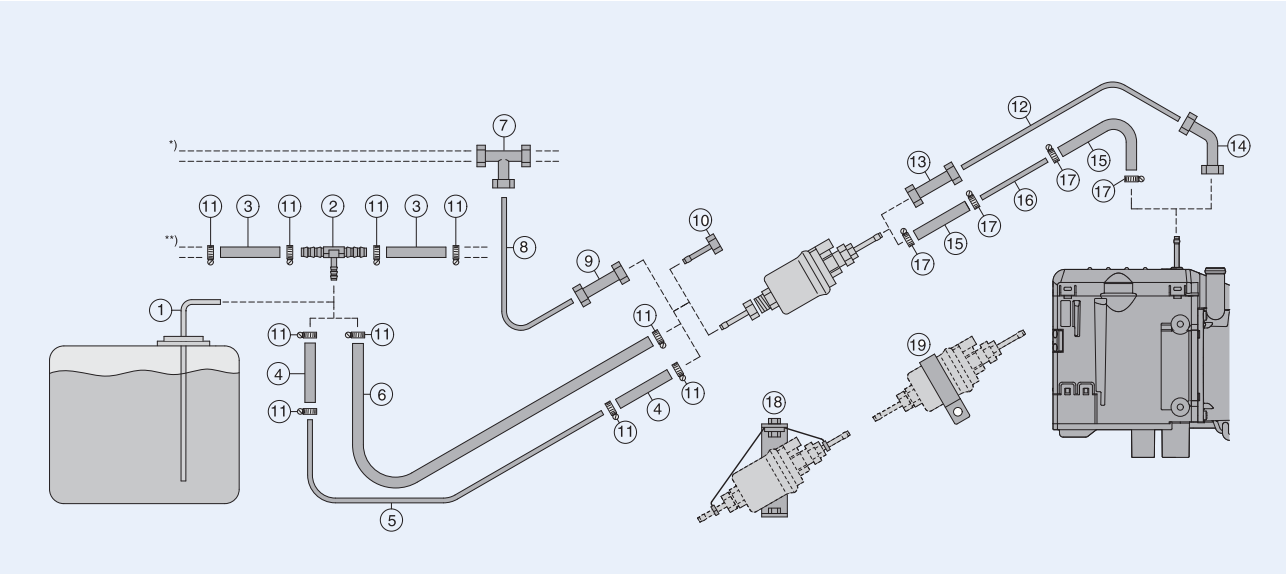
No.	Name
1	Pipe clamp
2	Exhaust pipe elbow with drain, ø 30 mm
3	Exhaust pipe elbow ø 30 mm with drainage
4	Flexible spiral pipe ø 30 mm
5	Condensate drain
6	Exhaust insulation
7	Connector ø 30 mm with drain
8	Exhaust silencer - flexible
9	Boat hull opening

Fuel supply

In most cases, a separate tank connection is recommended for the fuel pick-up, and this connection should be installed in the fuel tank (for metal tanks only). If installing a separate tank connection in the fuel tank is not an option, then fuel must be picked up through a T-fitting that is connected to the fuel supply line that runs from the fuel tank to the engine.

Please note!

- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Refer to the Accessory Parts Catalogue or to the appropriate replacement parts lists if you need more parts for the fuel supply.
- Fuel hoses in engine compartments must be fire-resistant in accordance with DIN EN ISO 7840.



No.	Name
1	Tank connection i/d = ø 2 mm
2	T junction
	6 – 6 – 6
	8 – 6 – 8
	10 – 6 – 10
	12 – 6 – 12
3	Connecting hose
	ø 5x3 (for pipe 6x2)
	ø 7.5x2.5 (for pipe 8x2)
4	Connection
	Reducer ø 5/3.5
	(for T-fitting and pipe 4x1)
	Hose ø 3.5x3 (for pipe 4x1)
	Hose ø 5x3 (for pipe 6x2)
5	Plastic pipe
	4x1
	6x2
6	Fuel hose 5x3
7	Threaded connection T ø 6
8	Metal pipe Cu 6x1
9	Threaded connection ø 6
10	Hose fitting ø 4
	(for metering pump for 4x1 pipe)

No.	Name
11	Hose clamp ø 11
12	Metal pipe 4x1
12	Metal pipe 4x1
13	Threaded connection ø 4
14	Threaded angle connection ø 4
15	Connecting hose ø 3.5x3 (for pipe 4x1. 25)
16	Plastic pipe 4x1.25
17	Hose clamp ø 9

Metering pump mount

18	Hanger for the metering pump
19	Rubber mount for the metering pump

Fuel connection kit in accordance with DIN EN ISO 7840

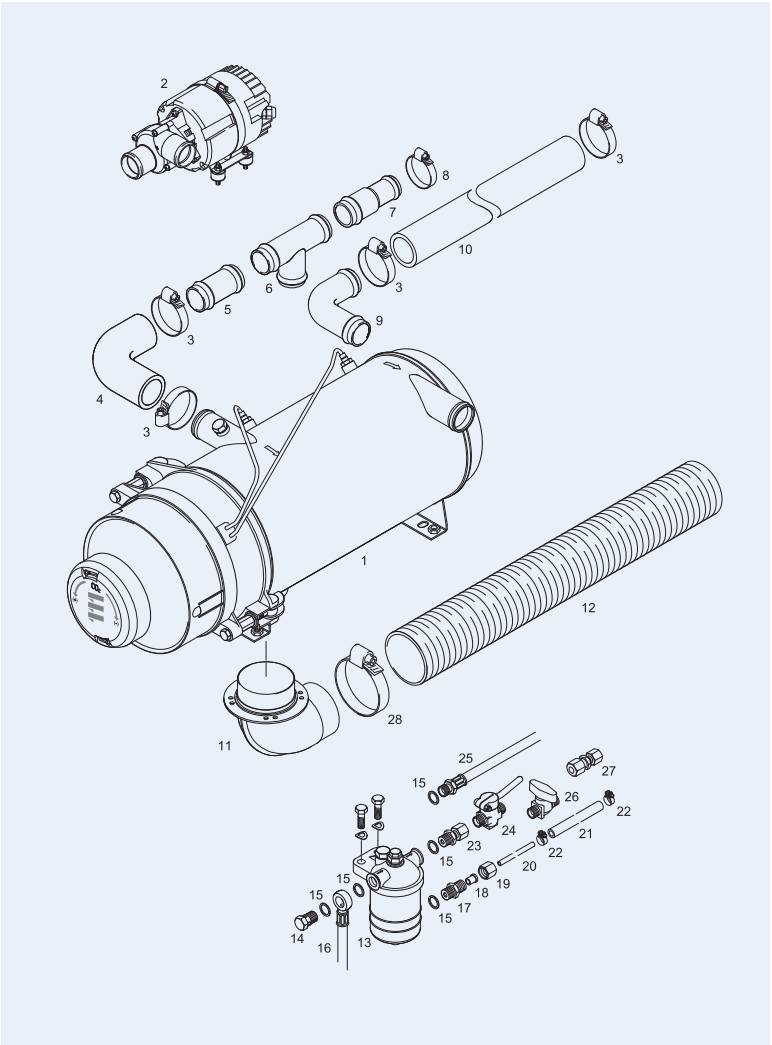
or Fig.	Fuel connection kit for boats includes:
	Two fire- resistant hoses,
	i/d = ø 3.5 mm, 50 mm long
	Two fire- resistant hoses,
	i/d = ø 5 mm, 50 mm long
	4 hose clamps, ø 12 mm
	4 hose clamps, ø 14 mm

Hydronic 16 24 30 35

Technical data

		Hydronic 16	Hydronic 24	Hydronic 30	Hydronic 35
Voltage	**V**	24	24	24	24
Heat output	**W**	16.000	24.000	30.000	35.000
Water throughput	**l/h**	5.000	5.000	5.000	5.000
Electrical power operation	**W**	60	80	105	120
Fuel consumption	**l/h**	2	2.9	3.65	4.2
Dimensions L x B x H	**mm**	600x230x222	600x230x222	600x230x222	600x230x222
Weight	**kg**	18	18	18	18

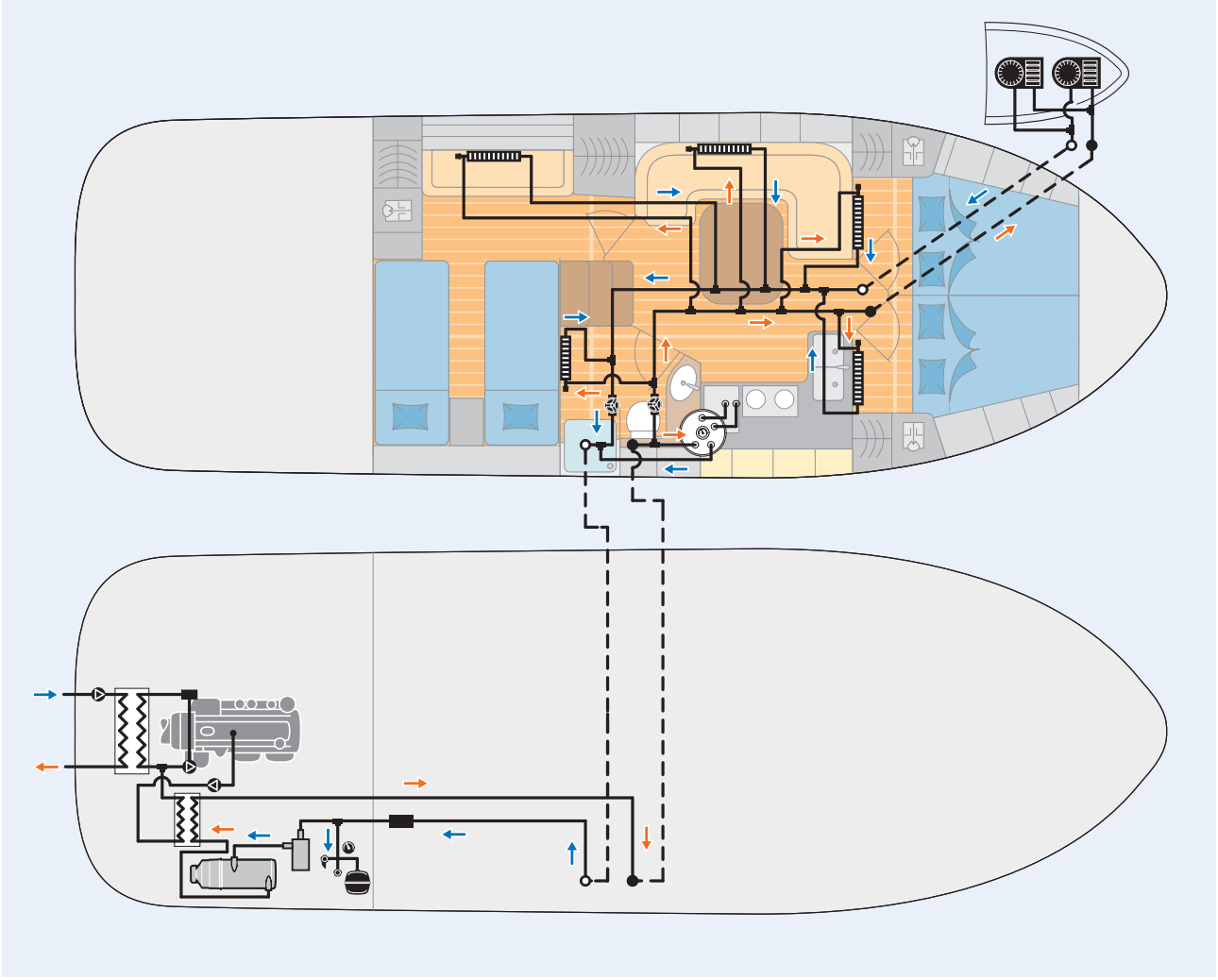
Parts required for installation



1	Heater
2	Water pump Flowtronic 6000SC
3	Hose clamp Ø 40-47mm
4	Hose elbow Ø 38mm
5	Connecting pipe Ø 38mm
6	T- pipe fitting Ø 38-38-38
7	Reducer Ø 38/28 mm
8	Hose clamp Ø 32-39 mm
9	Pipe elbowØ 38 mm
10	Water hose Ø 38 mm
11	Exhaust pipe elbowØ 70 mm
12	*Flexible or rigid exhaust pipe Ø 70 mm
13	Fuel filter
14	Hollow bolt M14x1.5
15	Sealing ring
16	Fuel suction line with banjo union A14x18
17	Threaded connection M14x1.5
18	Bushing
19	Gland nut M14x1.5
20	*Fuel pipe Ø 6x1 (Cu)
21	Fuel hose Ø 5x3
22	Hose clamp Ø11
23	Threaded connection M14x1.5
24	Ball cock M14x1.5
25	Fuel return pipe
26	Quick close valve
27	Threaded reducer Ø 8 / Ø 6
28	*Hose clamp

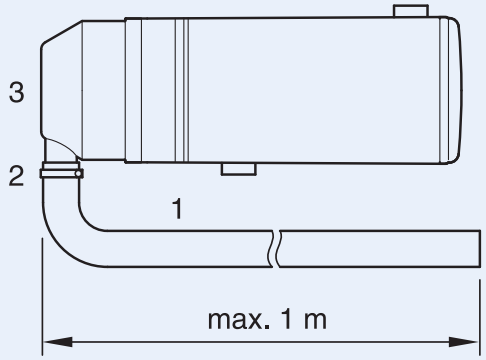
*Items 12, 20 and 28 must be purchased at a specialty shop

	Item parts list	Order numbers starting on page
Heater scope of delivery		
Hydronic heater 16 – 35	1-2	
The following must also be ordered:		
Parts for routing water	3-10	88
Exhaust gas and combustion air system parts	11-12	98
Fasteners	22	114
Parts carrying fuel	13-28	106



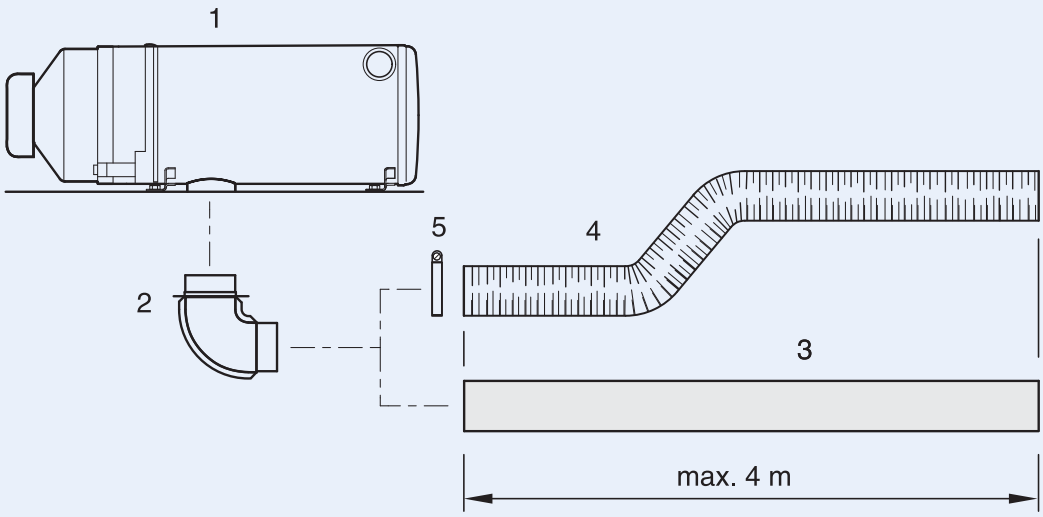
The ideal scenario for motor boats is to install the heater in the engine compartment. The combustion air is drawn in from the engine compartment and the exhaust gases are fed to the outside through the opening in the boat hull. A water pump feeds the cold water across the heater's heat exchanger. The heated water flows through a line system to heat each of the individual spaces by means of convectors, radiators and flat panel radiators. A connected boiler can provide water for showering and tap water in the galley. The engine can also be integrated through a water/water heat exchanger. That gives you the option of heating the boat by using heat from the engine during your boat trip, and of loading the boiler.

Parts for routing combustion air



No.	Name
1	Flexible hose for combustion air Ø 60 mm
2	Hose clamp Ø 50 - 70 mm
3	Hood for combustion air

Parts for the exhaust system



No.	Name
1	Heater
2	Exhaust pipe elbow
3	Exhaust pipe
4	Flexible exhaust pipe
5	Pipe clamp

Please note!

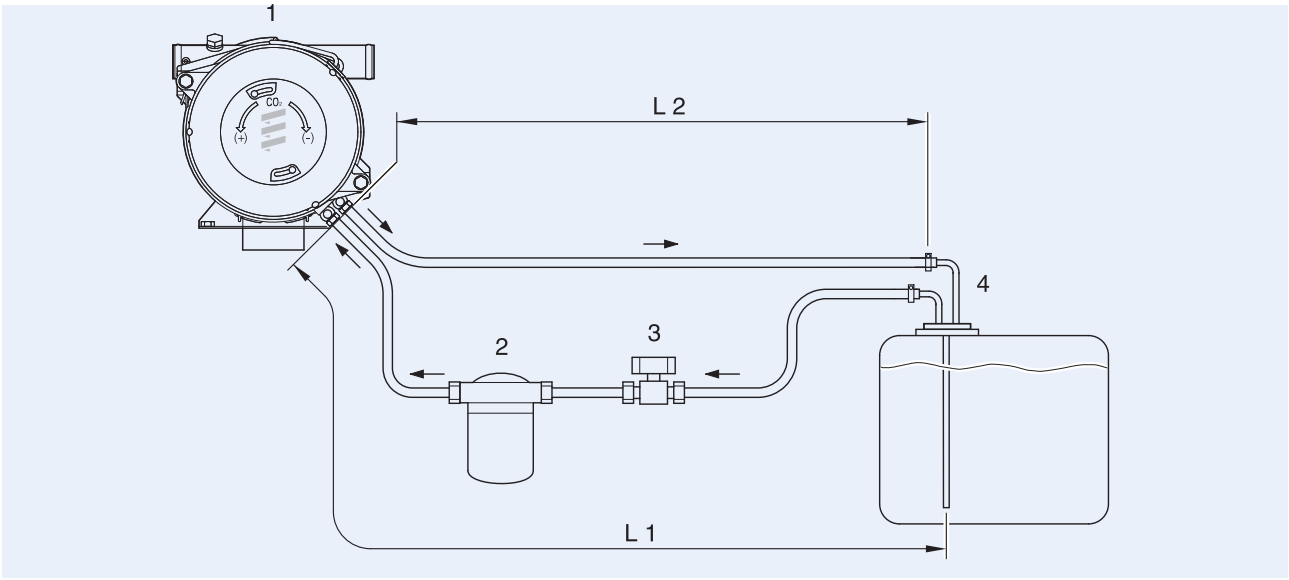
Items 3 – 5 must be purchased in a specialty shop.

Fuel feed line

In most cases, it is recommended that the fuel pick-up uses a separate tank connection and that this connection should be installed in the fuel tank (for metal tanks only). If installing a separate tank connection in the fuel tank is not an option, then fuel must be picked upthrough a T-fitting that is connected to the fuel supply line that runs from the fuel tank to the motor.

Please note!

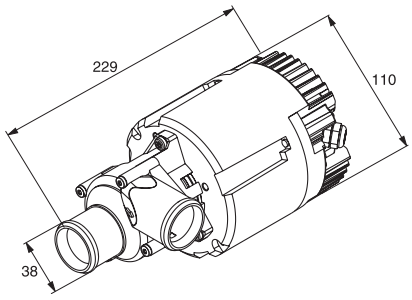
- Be sure to follow all specifications, especially the safety instructions listed in the Technical Description in this chapter. The Technical Description is included with every heater unit.
- Refer to the Accessory Parts Catalogue or to the appropriate replacement parts lists if you need more parts for the fuel supply.
- Fuel hoses in engine compartments must be fire-resistant in accordance with DIN EN ISO 7840.

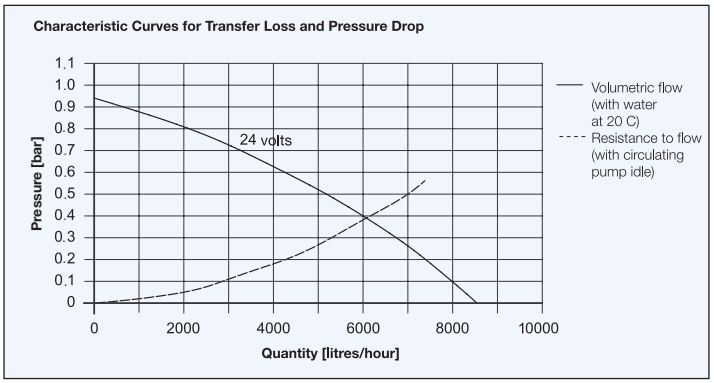


No.	Name
1	Heater
2	Fuel filter
3	Quick close valve
4	Fuel tank pick-up

Parts for routing water

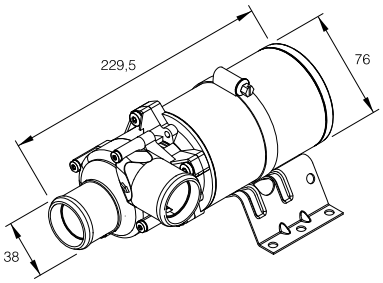
1. Water pump Flowtronic 6000SC
with electro-magnetic clutch, with bracket 7,300 l/h at 0.2 bar

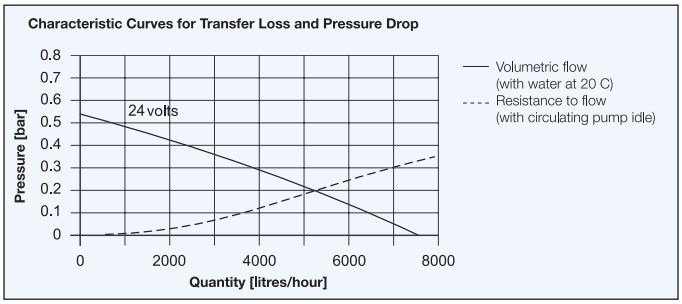




24 V

2. Water pump Flowtronic 5000
with bracket,
5,200 l/h at 0.2 bar



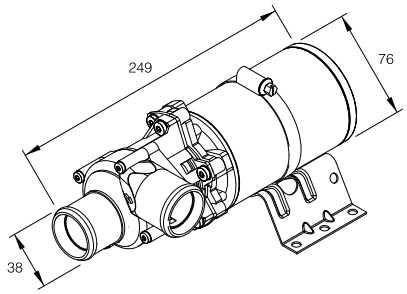


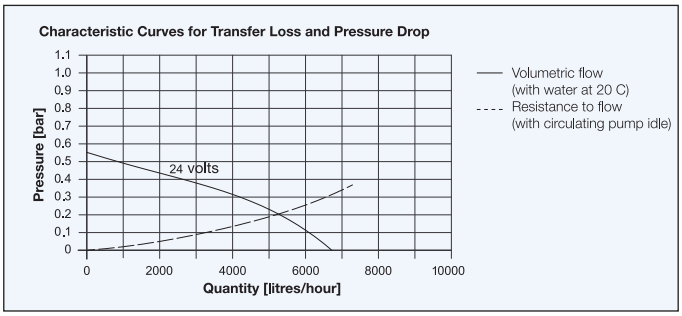
24 V

Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
		■	25 1818 27 00 00
		■	25 1818 29 00 00

■ can be used without restrictions
~ with restrictions

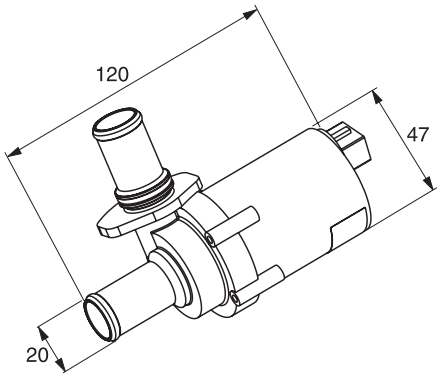
3. Water pump Flowtronic 5000S
with electromagnetic clutch,
with bracket
5,200 l/h at 0.2 bar

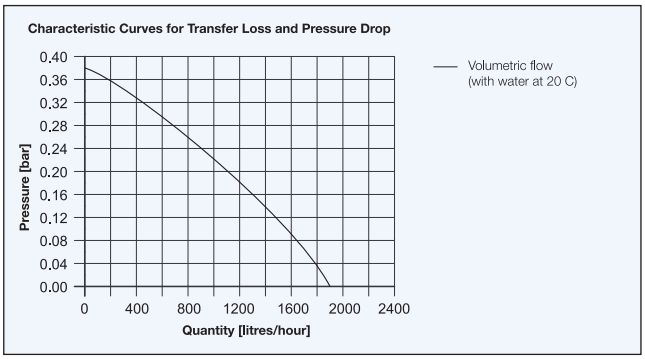




	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
24 V			■	25 1818 30 00 00

4. Water pump Flowtronic 1200
1,100 l/h at 0.2 bar



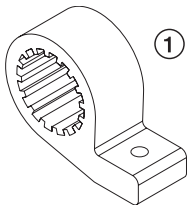


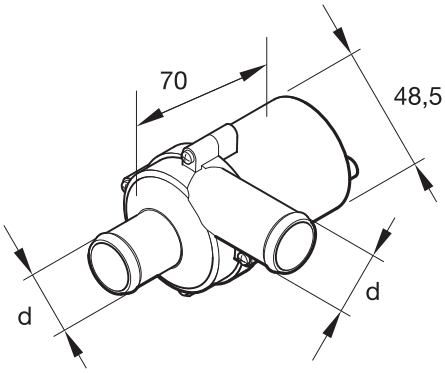
	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
12 V		■		25 2434 25 01 00
24 V		■		25 2435 25 01 00

■ can be used without restrictions
~ with restrictions

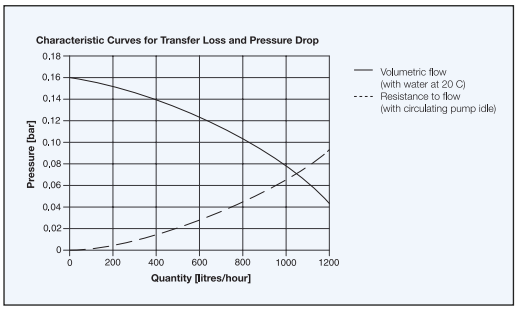
Parts for routing water

5. Water pump Flowtronic 800S
800 l/h at 0.1 bar



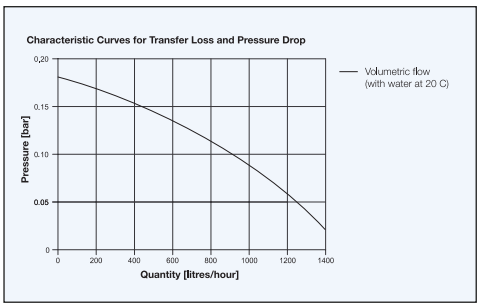


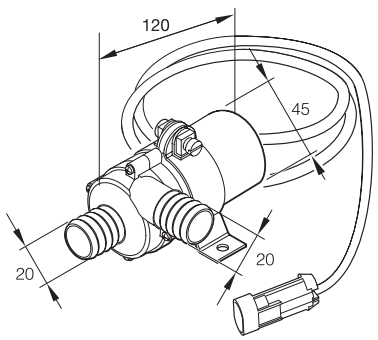
① Bracket page 115



	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
Ø 18mm, 12 Volt	■			25 2217 25 00 00
Ø 18mm, 24 Volt	■			25 2218 25 00 00
Ø 20mm, 12 Volt	■			330 00 012

6. Water pump Flowtronic 900
With bracket, wire harness 500 mm long
900 l/h at 0.1 bar

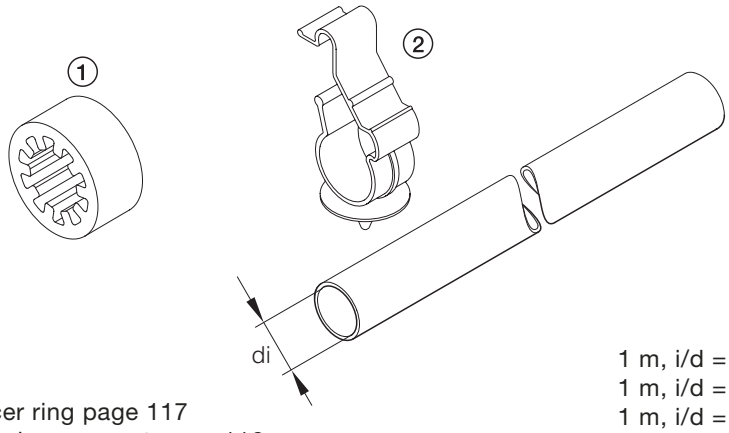




	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
24 Volt	■			25 2009 25 00 00

■ can be used without restrictions
~ with restrictions

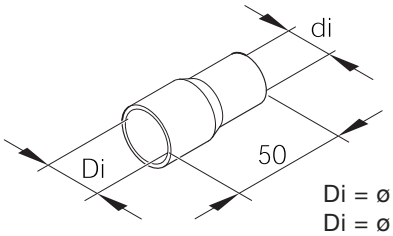
7. Water hose (running meter)



①Spacer ring page 117
②Water hose mount page 116

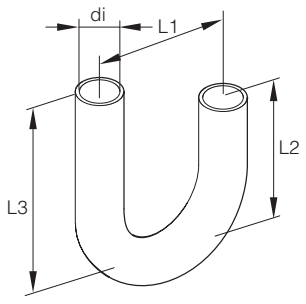
	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
1 m, i/d = ø 18 mm	■	~		360 75 083
1 m, i/d = ø 20 mm	~	■	~	360 75 084
1 m, i/d = ø 38 mm			■	360 75 096

8. Reducer hose



	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
Di = ø 20 mm, i/d = ø 15 mm	~	~		20 1533 88 00 04
Di = ø 20 mm, i/d = ø 18 mm	■	■		20 1528 88 00 02
Di = ø 22 mm, i/d = ø 18 mm	~	~		20 1645 89 00 08

9. Water hose

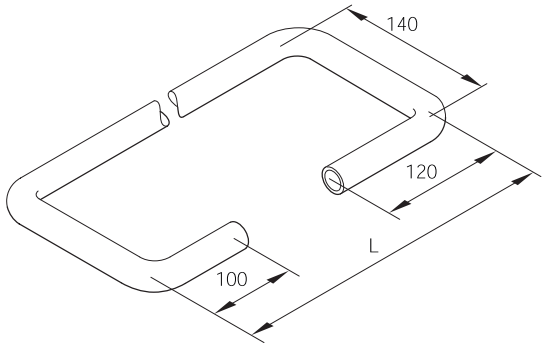


	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 20 mm / 180° / L1 = 50 / L 2 = 50 / L3 = 75	~	■		20 1534 88 00 02
i/d = ø 18 mm / 180° / L1 = 45 / L 2 = 55.5 / L3 = 60.5	■	~		360 75 043

■ can be used without restrictions
~ with restrictions

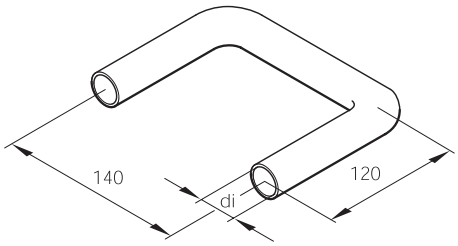
Parts for routing water

10. Water hose



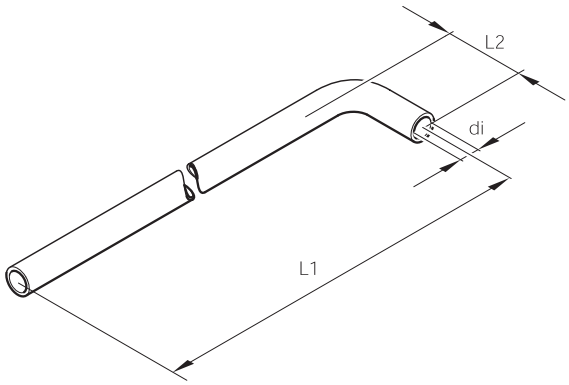
	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 18 mm, L = 500 mm	■	~		24 0132 00 00 01
i/d = ø 18 mm, L = 2000 mm	■	~		20 1690 81 00 01
i/d = ø 20 mm, L = 2000 mm	~	■		25 1917 80 00 01

11. Water hose



i/d = ø 20 mm	~	■		24 0117 80 00 01

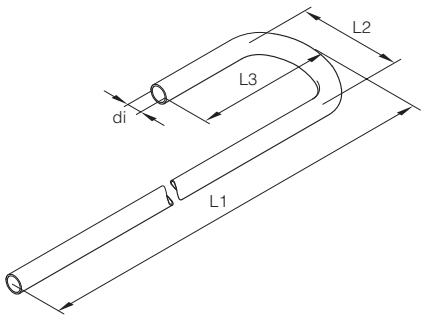
12. Water hose



i/d = ø 18 mm, L1 = 1000 mm, L2 = 50 mm	■	~		20 1645 80 00 01
i/d = ø 18 mm, L1 = 840 mm, L2 = 240 mm	■	~		20 1645 89 00 01

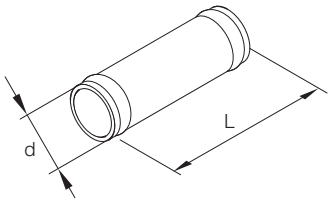
■ can be used without restrictions
~ with restrictions

13. Water hose



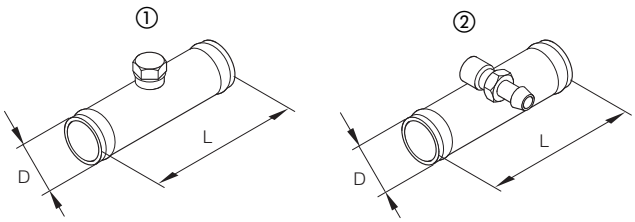
	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 18 mm, L1 = 865 mm, L2 = 130 mm, L3 = 165 mm	■	~		20 1645 89 00 02

14. Connecting pipe,
Brass



	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
d = ø 18 mm, L = 55	■	~		20 1528 88 00 03
d = ø 20 mm, L = 55	~	■		20 1534 88 00 01
d = ø 22 mm, L = 55	~	~		20 1645 89 00 07
d = ø 38 mm, L = 60			■	25 1214 89 00 21

15. Vent tube
Brass

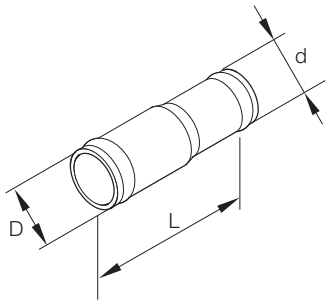


	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
① D = ø 18 mm, L = 65 mm	■	~		20 1645 89 01 00
② D = ø 18 mm, L = 65 mm	■	~		20 1645 89 12 00

■ can be used without restrictions
~ with restrictions

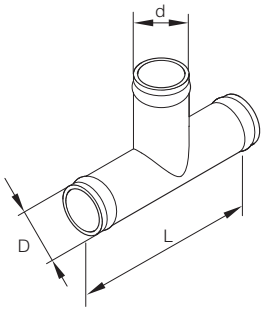
Parts for routing water

16. Reducer
Brass



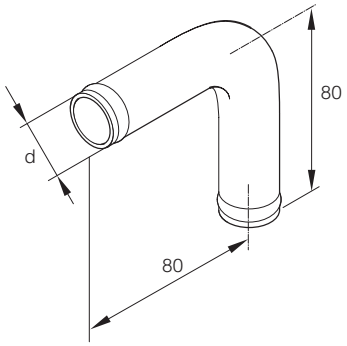
	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
D = ø 18 mm, d = ø 15 mm, L = 60 mm	■	~		20 1645 80 02 01
D = ø 20 mm, d = ø 15 mm, L = 60 mm	~	■		24 0134 00 04 01
D = ø 20 mm, d = ø 18 mm, L = 60 mm	■	■		20 1645 89 00 06
D = ø 22 mm, d = ø 15 mm, L = 60 mm	~	~		25 1214 89 00 11
D = ø 22 mm, d = ø 18 mm, L = 60 mm	~	~		20 1645 89 00 05
D = ø 22 mm, d = ø 20 mm, L = 60 mm	~	■		25 1214 89 00 04
D = ø 38 mm, d = ø 28 mm, L = 80 mm			■	25 1214 89 00 19

17. T-Connector
Brass



	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
D = ø 18 mm, d = ø 15 mm, L = 60 mm	■	~		25 1214 89 16 00
D = ø 18 mm, d = ø 18 mm, L = 75 mm	■	~		20 1645 89 10 00
D = ø 20 mm, d = ø 18 mm, L = 75 mm	■	■		20 1645 89 11 00
D = ø 20 mm, d = ø 20 mm, L = 75 mm	~	■		20 1673 80 11 00
D = ø 38 mm, d = ø 38 mm, L = 120 mm			■	25 1371 89 04 00

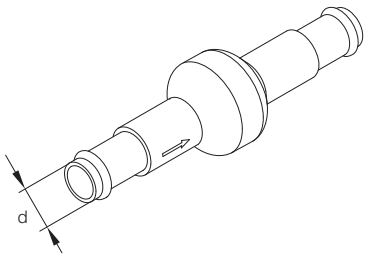
18. Elbow pipe



	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
d = ø 18 mm	■	~		20 1645 89 00 04
d = ø 20 mm	~	■		25 1214 89 00 02

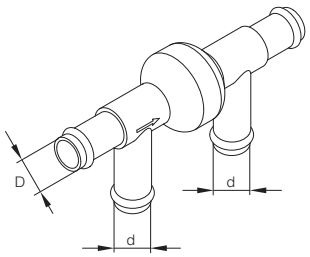
■ can be used without restrictions
~ with restrictions

19. Non-return valve
Metal



	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
d = ø 18 mm	■	~		254 00 071
d = ø 20 mm	~	■		254 00 072

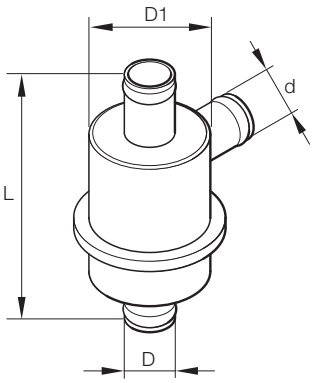
20. Non-return valve
Sealed version, metal



D = ø 18 mm, d = ø 18 mm				254 00 070
D = ø 20 mm, d = ø 18 mm				254 00 073
D = ø 20 mm, d = ø 20 mm				254 00 074

~ Check the connector diameter

21. Thermostat
Brass

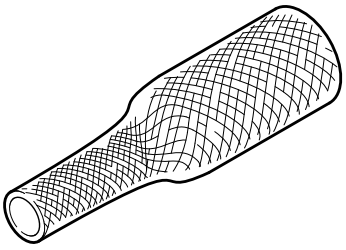


D = ø 18 mm, d = ø 18 mm, D1 = ø 48 mm, L = 109 Switching temperature 70–75 °C	■	~		330 00 123
D = ø 20 mm, d = ø 20 mm, D1 = ø 48 mm, L = 112 Switching temperature 70–75 °C	~	■		330 00 124

■ can be used without restrictions
~ with restrictions

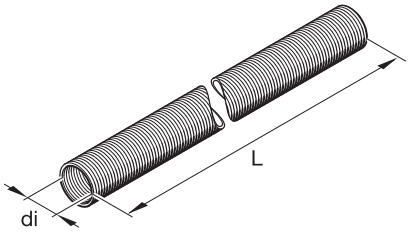
Parts for routing water

22. Heat-shrink tube
Abrasion protection for water hoses



	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 40 mm / ø 20 mm	■	■	■	360 00 333

23. Protective hose protection for water hoses
with ø 18 mm and ø 20 mm
APK (temperature and abrasion protection)



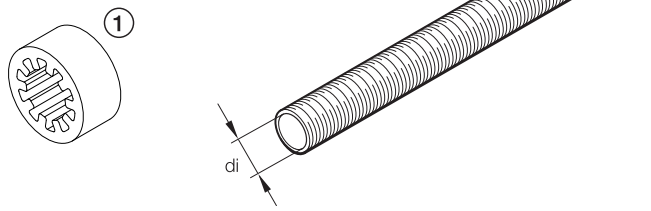
	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
di= ø 30 mm, L = 2m	■	■		10 2114 25 02 00

■ can be used without restrictions
~ with restrictions

Notes

Exhaust gas and combustion air system parts

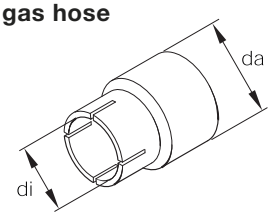
1. Flexible exhaust pipe
Stainless steel (by the meter)



(1) Spacer ring, page 115

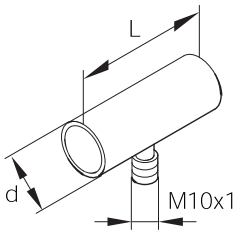
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 24 mm, dual ply	■	■	■		■			360 61 299
i/d = ø 30 mm, dual ply						■		360 61 300
i/d = ø 40 mm, dual ply, 3000 mm long				~				360 61 380
i/d = ø 42 mm, dual ply				■				360 61 381

2. Transition piece for exhaust gas hose



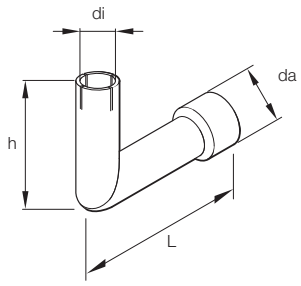
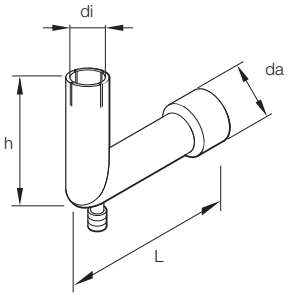
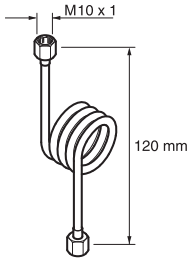
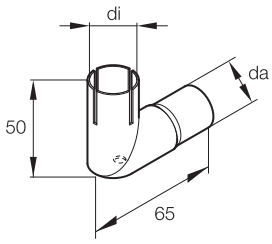
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 24 mm, a/d = ø 26 mm	■	■	■		■			25 1216 88 04 01
i/d = ø 24 mm, a/d = ø 30 mm	■	■	■		■			25 1520 80 01 01
i/d = ø 30 mm, a/d = ø 20 mm							■	25 1688 89 00 08
i/d = ø 30 mm, a/d = ø 22 mm							■	22 1050 89 00 03
i/d = ø 30 mm, a/d = ø 26 mm							■	25 1226 89 00 29

3. Adapter piece with condensate drainage



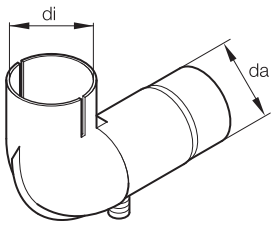
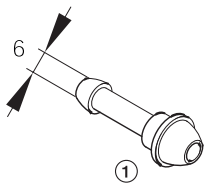
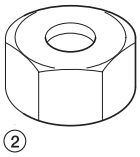
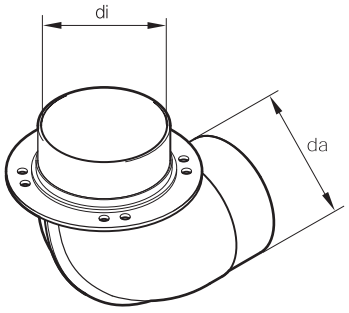
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
d = ø 24 mm, L = 65 mm	■	■	■		■			22 1050 89 40 00
d = ø 30 mm, L = 60 mm						■		25 1226 89 59 00

■ can be used without restrictions
~ with restrictions

	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic 8-12	Hydronic 16 - 35	Order no.
4. Exhaust pipe elbow								
								
i/d = ø 24 mm, a/d = ø 30 mm, h = 50 mm / 80 mm	■	■	■		■			25 1226 89 55 00
5. Exhaust pipe elbow with drain M10 x 1								
								
i/d = ø 24 mm, a/d = ø 24 mm, h = 50 mm, L = 110 mm	■	■	■		■			25 1226 89 45 00
i/d = ø 24 mm, a/d = ø 30 mm, h = 50 mm, L = 80 mm	■	■	■		■			22 1050 89 39 00
6. Condensate drain Can be combined with items 3, 5, 8								
								
	■	■	■	■	■	■	■	25 8547 16 02 00
7. Exhaust pipe elbow								
								
with condensate hole i/d = ø 24 mm, a/d = ø 24 mm	■	■	■		■			24 0076 07 01 00
without condensate hole i/d = ø 24 mm, a/d = ø 24 mm	■	■	■		■			24 0172 01 01 00

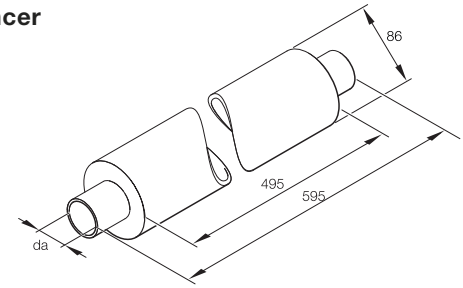
■ can be used without restrictions
~ with restrictions

Exhaust gas and combustion air system parts

		Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
8. Exhaust pipe elbow with drain M10 x 1 Can be combined with item 9									
	i/d = 42 mm, a/d = 40 mm				■				25 1226 89 46 00
9. Hose stem straight, for gland nut M 10 x 1 **Gland nut** for hose stem, straight Can be combined with item 8									
									
	①	~	~	~	~	~	~	~	25 1351 88 01 01
	② M10 x 1	~	~	~	~	~	~	~	116 10 002
10. Elbow exhaust pipe									
	i/d = ø 70 mm, a/d = ø 70 mm							■	22 1000 40 03 00

■ can be used without restrictions
~ with restrictions

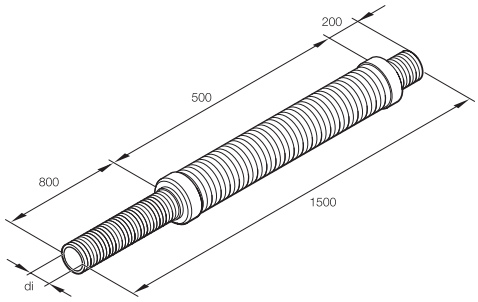
11. Exhaust silencer



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
a/d = ø 40 mm				■				25 1570 89 01 00

12. Exhaust silencer made of stainless steel for boats

flexible

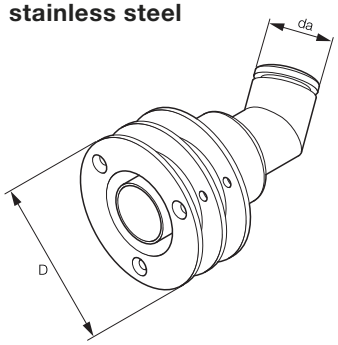


~ = Check the connector diameter

	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 30 mm	~	~	~	~	~	■		25 1226 89 58 00

13. Opening in boat hull, stainless steel

polished

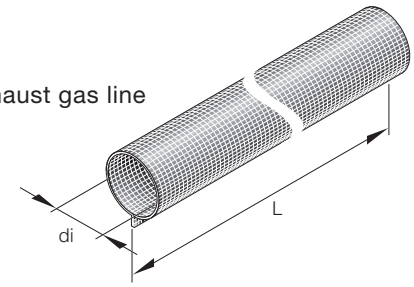


	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
a/d = ø 30 mm, D = ø 90 mm	~	~	~		~	■		22 1050 89 43 00
a/d = ø 40 mm, D = ø 100 mm				■				22 1050 89 44 00

■ can be used without restrictions
~ with restrictions

14. Woven fibreglass hose
(heat protection)

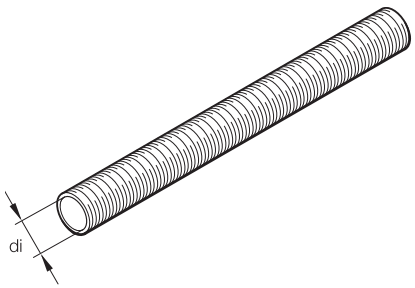
Check diameter for exhaust gas line



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 30 mm, L = 300 mm	■	■	■		■			25 1676 80 00 01
i/d = ø 30 mm, L = 150 mm	■	■	■		■			24 0151 00 00 05
i/d = ø 30 mm, L = 60 mm	■	■	■		■			25 1973 80 02 01
i/d = ø 40 mm, L = 60 mm				~		■		25 1894 80 04 01
i/d = ø 70 mm, L = 1200 mm							■	25 1445 05 03 04

■ can be used without restrictions
~ with restrictions

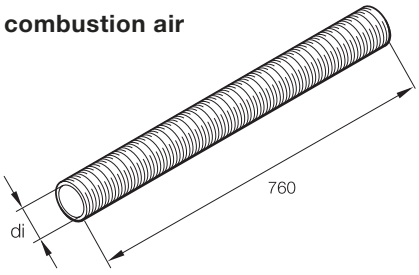
15. Flexible pipe for combustion air
(running meter)



*in conjunction with item 18

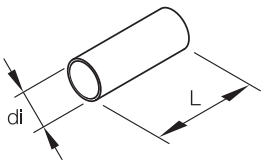
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 20 mm					■			360 00 092
i/d = ø 25 mm	■	■	■			■		10 2114 21 00 00
i/d = ø 30 mm								10 2114 25 00 00
*i/d = ø 60 mm							■	10 2114 31 00 00

16. Flexible dual pipe for combustion air
noise attenuating



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = 20 mm					■			360 00 179

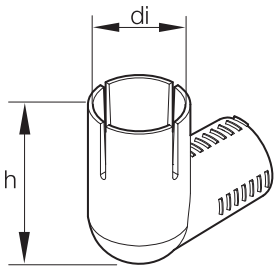
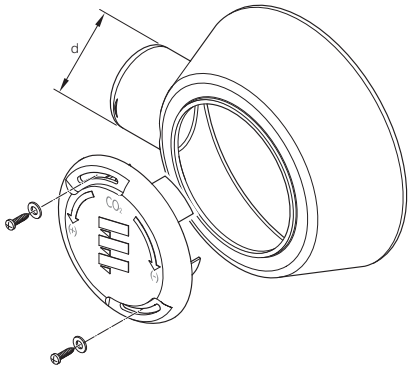
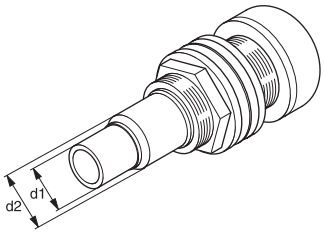
17. Hose connector pipe for combustion air



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
d = ø 24 mm L=50 mm	■	■	■		■	■		25 1226 89 00 31

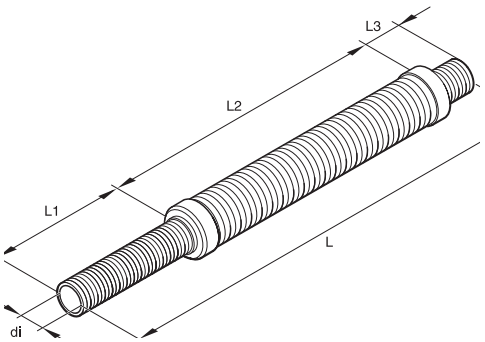
■ can be used without restrictions
~ with restrictions

Exhaust gas and combustion air system parts

	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
18. Elbow for combustion air, Plastic								
								
i/d = ø 20 mm, h = 45 mm					■			22 1000 40 00 02
i/d = ø 25 mm, h = 50 mm	■	■	■			■		22 1000 40 00 01
19. Hood with hose connection for combustion air								
								
d = ø 60 mm							■	22 1000 40 06 00
20. Opening in boat hull for combustion air max. boat hull thickness 20 mm								
								
d_1= ø 25mm d_2= 30mm	■	■	■	■		■		22 1050 89 35 00

■ can be used without restrictions
~ with restrictions

21. Silencer for combustion air,
flexible

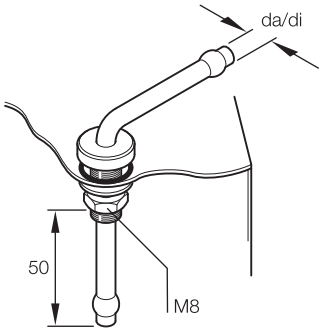


	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 20 mm, L1 = 100, L2 = 160, L3 = 100 mm, L = 360 mm					■			25 1688 89 03 00
i/d = ø 25 mm, L1 = 90, L2 = 310, L3 = 15 mm, L = 415 mm	■	■	■			■		20 1451 01 01 00
i/d = ø 25 mm, L1 = 135, L2 = 405, L3 = 25 mm, L = 565 mm	■	■	■			■		20 1689 80 05 00

■ can be used without restrictions
~ with restrictions

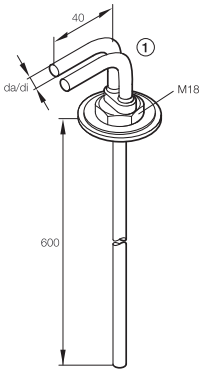
Parts carrying fuel

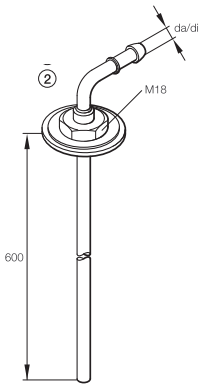
1. Tank connection



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
a/d = ø 4 mm, i/d = ø 2 mm	■	■	■		■			22 1000 20 15 00

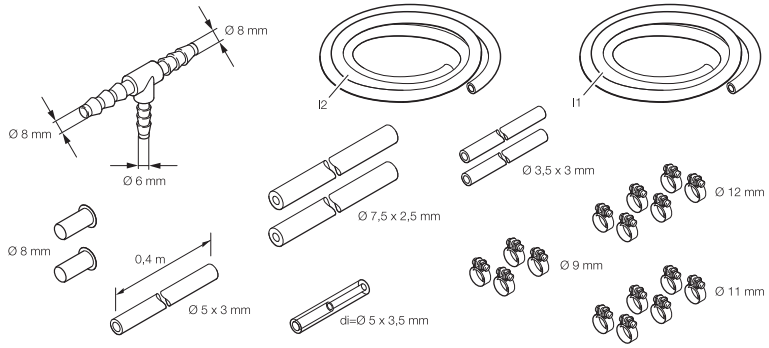
2. Tank connection





	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
① a/d = 6 mm, i/d = ø 4 mm							■	25 1226 89 40 00
② a/d = 6 mm, i/d = ø 2 mm	■	■	■		■			25 1226 89 50 00
② a/d = 6 mm, i/d = ø 4 mm				■		■		25 1156 30 00 00

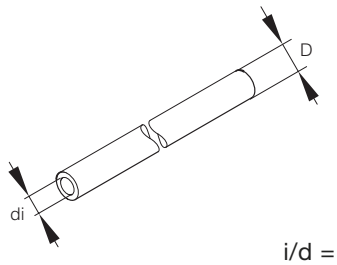
3. Fuel supply kit
Tank pick-up feed pipe



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
1 = pipe ø 4x1.25; L = 6 m / 2 = pipe ø 6x1; L = 6 m	■	■	■		■			22 1000 20 17 00

■ can be used without restrictions
~ with restrictions

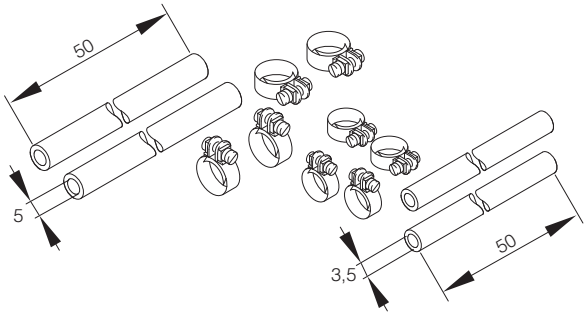
4. Fuel hose (running meter)



*PME compatible

	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 3.5 mm, D = ø 9.50 mm	■	■	■	■	■	■		360 75 300
*i/d = ø 3.5 mm, D = ø 9.50 mm	■	■	■	■	■	■		360 75 400
i/d = ø 5.0 mm, D = ø 11.0 mm	■	■	■	■	■	■	■	360 75 350
*i/d = ø 5.0 mm, D = ø 11.0 mm	■	■	■	■	■	■	■	360 75 401
i/d = ø 7.5 mm, D = ø 12.5 mm	~	~	~	~	~	~	■	360 31 070
*i/d = ø 7.5 mm, D = ø 13.5 mm	~	~	~	~	~	~	■	360 75 402
*i/d = ø 9.0 mm, D = ø 15.0 mm	~	~	~	~	~	~	■	360 75 404

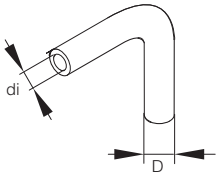
5. Fuel supply kit
for routing the fuel line
in the boat's engine compartment



Fire-resistant hoses
according to DIN EN ISO 7840

	■	■	■	■	■	■		22 1000 20 10 00

6. Fuel hose
105° bend



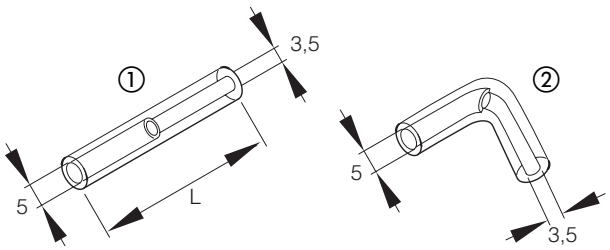
PME compatible

i/d = ø 3.5 mm, D = ø 9.5 mm	■	■	■	■	■	■		25 1888 80 01 01

■ can be used without restrictions
~ with restrictions

Parts carrying fuel

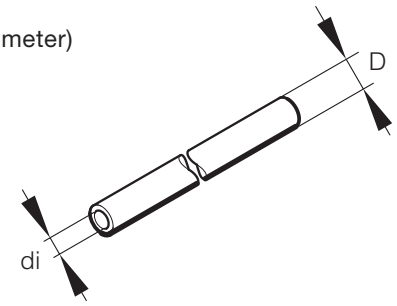
7. Transition pipe



*PME compatible

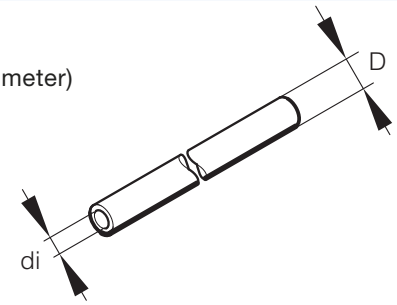
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
*① L = 40 mm	■	■	■	■	■	■		25 1888 80 01 02
① L = 120 mm	■	■	■	■	■	■		25 1596 80 00 01
*② elbow 110°	■	■	■	■	■	■		25 2110 05 03 01

8. Fuel line (running meter)
Plastic



		Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 1.5 mm, D = ø 4 mm	Natural	■	■	■		■			890 31 118
i/d = ø 2 mm, D = ø 4 mm	Blue	■	■	■	■	■			890 31 108
i/d = ø 2 mm, D = ø 6 mm	Black	■	■	■		■	■		890 31 125
i/d = ø 4 mm, D = ø 6 mm	Blue				■		■	■	890 31 101

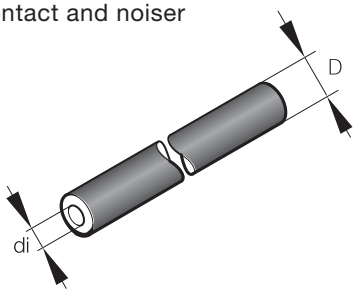
9. Fuel line (running meter)
Metal



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
i/d = ø 2 mm, D = ø 4 mm	■	■	■	■	■	■		849 10 004

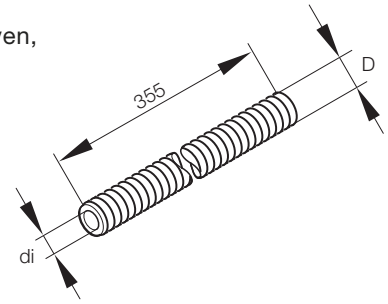
■ can be used without restrictions
~ with restrictions

10. Foam rubber hose (running meter) Fel pipe
Protection to insulate against contact and noiser



i/d = ø 5 mm, D = ø 10 — 360 75 200

11. Heat-protection hose
for fuel line, fibreglass-woven, laminated with aluminium

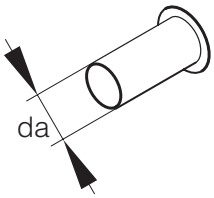


Also usable for electrical conduction

i/d = ø 10 mm, D = 13 mm — 360 00 183

12. Reinforcement bushing
Brass

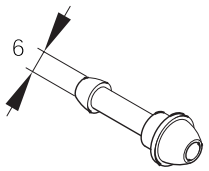
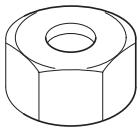
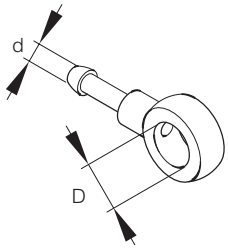
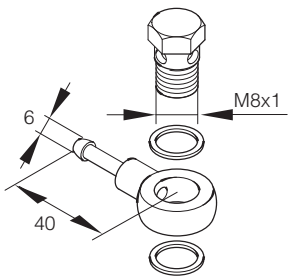
Packaging unit – qty. 10



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
a/d = ø 4 mm for pipe 6x1	■	■	■	■	■	■		22 1000 20 01 00
a/d = ø 6 mm for pipe 8x1				■		■	■	22 1000 20 02 00
a/d = ø 8 mm for pipe 10x1				■		■	■	22 1000 20 03 00

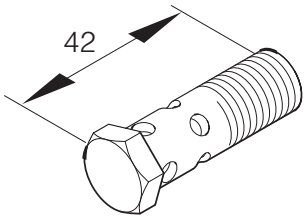
■ can be used without restrictions
~ with restrictions

Parts carrying fuel

		Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
13. Hose stem straight. for gland nut M 10 x 1		~	~	~	~	~	~	~	25 1351 88 01 01
14. Gland nut for hose stem, straight									
M10 x 1		~	~	~	~	~	~	~	116 10 002
15. Banjo union with hose connection									
d = ø 5 mm, D = ø 18 mm					■		■	■	25 1352 88 00 05
d = ø 5 mm, D = ø 14 mm					■		■	■	25 1373 88 03 00
16. Kit for fuel circulating pump					■		■	■	25 1226 89 68 00

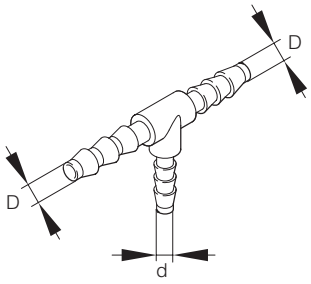
■ can be used without restrictions
~ with restrictions

17. Hollow bolt,
for banjo pipe union



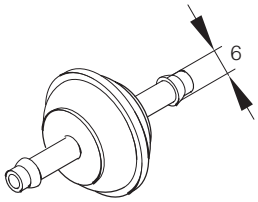
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
M14 x 1.5							■	25 1373 88 00 01

18. T-pipe fitting
Plastic



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
d = ø 4 mm, D = ø 8 mm	■	■	■	■	■	■		262 31 155
d = ø 5 mm, D = ø 5 mm	■	■	■	■	■	■		262 31 149
d = ø 6 mm, D = ø 6 mm	■	■	■	■	■	■	■	262 31 150
d = ø 6 mm, D = ø 8 mm	■	■	■	■	■	■	■	262 31 151
d = ø 6 mm, D = ø 10 mm	■	■	■	■	■	■	■	262 31 152
d = ø 6 mm, D = ø 12 mm	■	■	■	■	■	■	■	262 31 153
d = ø 6 mm, D = ø 15 mm	■	■	■	■	■	■	■	262 31 154

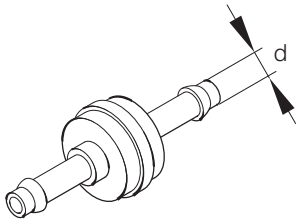
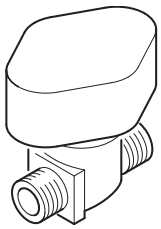
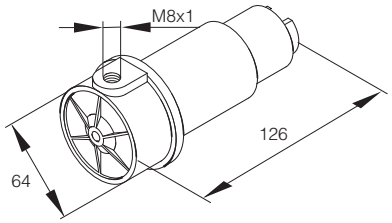
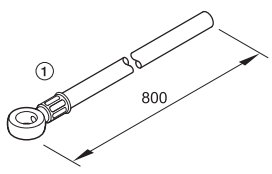
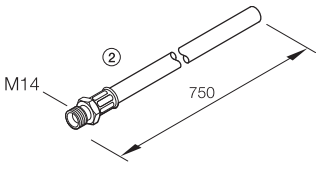
19. Fuel filter with metal screen
Plastic/for metering pump with cup screen



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
	■	■	■	■	■	■		25 1226 89 00 37

■ can be used without restrictions
~ with restrictions

Parts carrying fuel

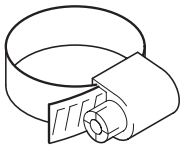
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
20. Non-return valve								
								
d = ø 6 mm	■	■	■	■	■	■	■	244 31 060
d = ø 8 mm	■	■	■	■	■	■	■	244 31 061
21. Quick close valve								
								
							■	330 00 210
22. Fuel circulating pump								
								
12 V increased suction capacity 0,19 bar	~	~	~	~	~	~	~	25 1226 89 82 00
24 V increased suction capacity 0.19 bar	~	~	~	~	~	~	~	25 1226 89 82 00
23. Fuel hose								
								
								
①							■	25 1698 05 03 00
②							■	25 1698 05 04 00

■ can be used without restrictions
~ with restrictions

Notes

Fasteners

1. Hose clamp

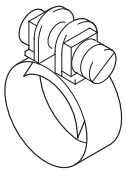


	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 16 – ø 25 mm					■			10 2067 01 60 25
ø 20 – ø 32 mm	■	■	■		■	■	~	10 2067 02 00 32
ø 32 – ø 50 mm				■				10 2067 03 20 50
ø 50 – ø 70 mm	■						■	10 2067 05 00 70
ø 70 – ø 90 mm	■	■						10 2067 07 00 90
ø 90 – ø110 mm		■	■	■				10 2067 09 01 10

2. Ear hose clamp

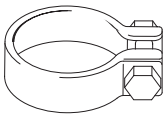
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 9 – ø 10.5 mm	■	■	■	■	■	■		152 61 104
ø 2 – ø 24.0 mm					■			152 61 115

3. Hose clamp



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 7 mm	~	~	~	~	~	~		10 2068 00 70 78
ø 9 mm	■	■	■	■	■	■		10 2068 00 90 98
ø10 mm	■	■	■	■	■	■		10 2068 01 00 98
ø11 mm	■	■	■	■	■	■		10 2068 01 10 98
ø12 mm	■	■	■	■	■	■		10 2068 01 20 98
ø14 mm	~	~	~	~	~	~	~	10 2068 01 40 98

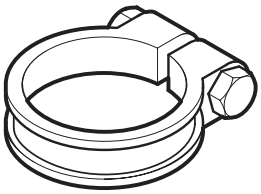
4. Pipe clamp for exhaust pipe



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 26 – ø 28 mm	■	■	■		■			22 1000 50 05 00

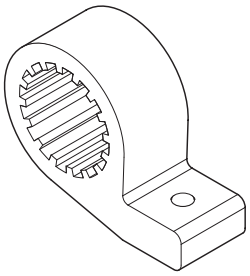
■ can be used without restrictions
~ with restrictions

5. Pipe clamp for exhaust pipe



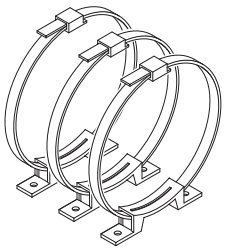
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 27 – ø 30 mm								152 09 002
ø 30 – ø 33 mm						■		152 09 003
ø 42 – ø 45 mm				■				152 09 004
ø 43 – ø 46 mm				■				152 09 005

6. Holder for metering pump and water pump
Flowtronic 800S
Rubber



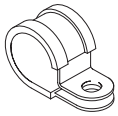
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 34 mm	■	■	■		■			22 1000 50 03 00
ø 41 mm				■	■	■		22 1000 50 07 00

7. Air hose mounting kit,
Plastic (qty. 3)



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 60 – ø 100 mm	■	■	■	■			■	22 1000 50 02 00

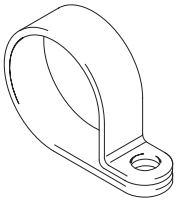
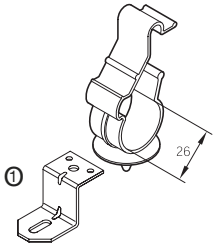
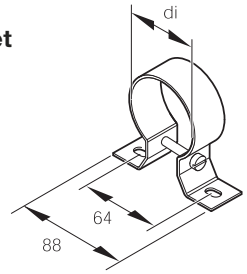
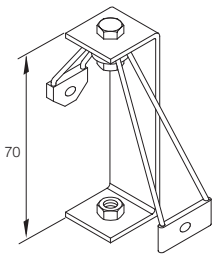
8. Pipe clamp
with rubber insert



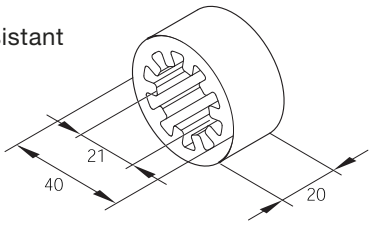
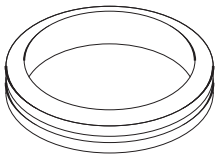
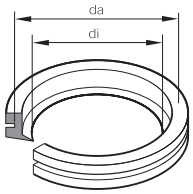
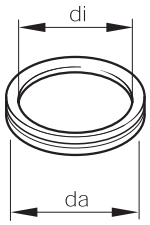
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
ø 10 mm	■	■	■	■	■	■		152 00 139
ø 41 mm	~	~	~	~	~	~		152 00 131

■ can be used without restrictions
~ with restrictions

Fasteners

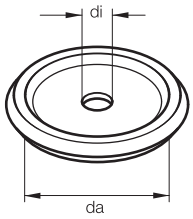
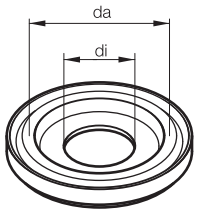
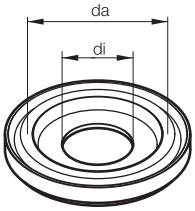
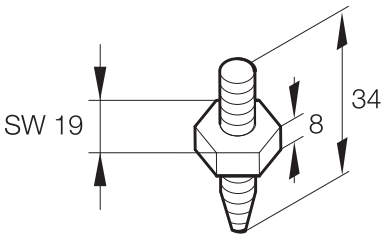
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
9. Clamp								
								
ø 25 mm	■	■	■	■	■	■		152 10 048
ø 28 mm	■	■	■	■	■	■		152 09 010
ø 41 mm				■				152 10 040
ø 50 mm				~				152 09 011
ø 65 mm				~				152 09 012
10. Mounting clamp for water hoses ø 15 mm - ø 20 mm								
								
① Bracket page 120					■	■		156 31 011
11. Holding clamp with bracket for water pump Flowtronic 1200 see page 89								
								
i/d = 50 mm						■		22 1000 10 05 00
12. Holder for metering pump can be used with boats and camping vehicles								
								
	■	■	■		■			20 1634 80 06 00

■ can be used without restrictions
~ with restrictions

		Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
13. Rubber spacer for exhaust line and water hoses silicone rubber, temperature resistant		■	■	■		■			22 1000 50 10 01
14. Sealing ring for exhaust pipe									
	i/d = ø 41 mm				■				20 8542 11 00 02
15. Seal ring for Heated air routing									
	i/d = 72 - 85 mm, a/d = ø 100 mm	■	■						20 1280 04 00 01
	i/d = 95 - 105 mm, a/d = ø 115 mm		■	■	■				25 1226 89 00 07
16. Rubber sleeve									
	i/d = ø 4 - 10 mm, a/d = ø 16.5 mm	■	■	■	■	■	■	■	20 1280 09 01 03

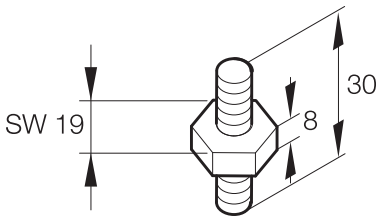
■ can be used without restrictions
~ with restrictions

Fasteners

		Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
17. Rubber sleeve									
	i/d = ø 8 mm, a/d = ø 38 mm	■	■	■	■	■	■	■	20 1575 89 00 01
18. Sleeve for combustion air									
	i/d = 25 – 30 mm, a/d = ø 41 mm	■	■	■		■	■		20 1282 20 00 01
19. Sleeve for exhaust pipe									
	i/d = 23 – 30 mm, a/d = ø 41 mm	■	■	■		■	■		20 1549 65 00 02
	i/d = 38 – 45 mm, a/d = ø 60 mm				■				20 1282 20 00 02
20. Metal rubber spacer									
	Threaded M6 / ST 6.3 C x 15	■	■	■	■	■	■	■	20 1673 80 01 01

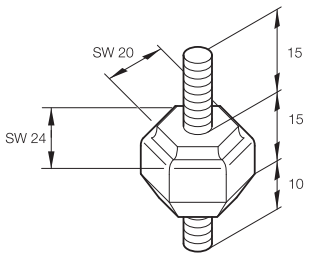
■ can be used without restrictions
~ with restrictions

21. Metal rubber spacer



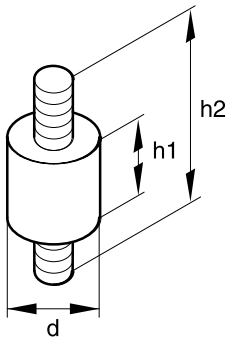
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
Threaded 2 x M6 x 11 mm	■	■	■	■	■	■	■	20 1185 00 00 01

22. Metal rubber bumper
additionally reinforced
with metal



	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
Thread M6 x 10 mm / M6 x 15 mm	■	■	■	■	■	■	■	22 1000 50 00 08

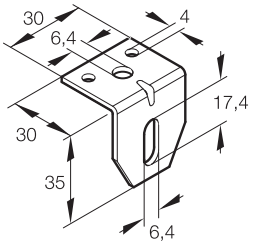
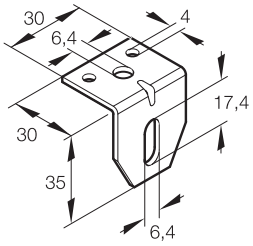
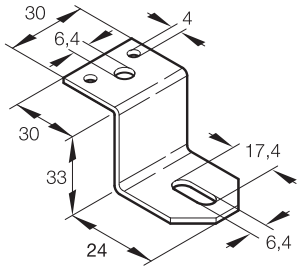
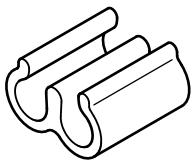
23. Metal rubber bumper



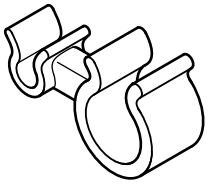
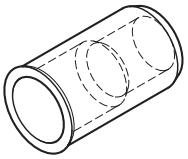
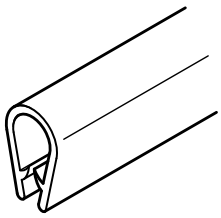
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
Thread 2 x M6 x 10, d = ø 20 mm, h1 = 15 mm, h2 = 35 mm	■	■	■	■	■	■	■	20 1607 65 00 02
Thread 2 x M6 x 10, d = ø 20 mm, h1 = 25 mm, h2 = 45 mm	■	■	■	■	■	■	■	20 1609 05 00 04
Thread 2 x M8 x 13, d = ø 30 mm, h1 = 15 mm, h2 = 41 mm	■	■	■	■	■	■	■	330 09 002

■ can be used without restrictions
~ with restrictions

Fasteners

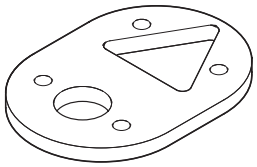
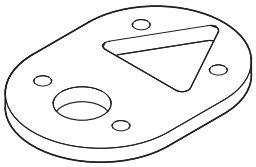
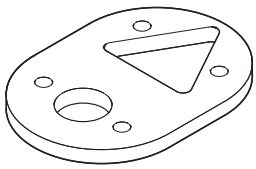
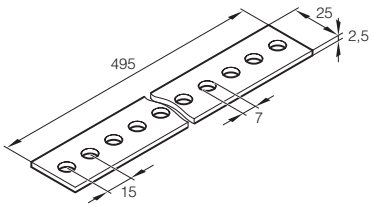
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
24. Bracket 	■	■	■	■	■	■	■	20 1348 03 00 02
25. Bracket 	■	■	■	■	■	■	■	20 1348 03 00 04
26. Bracket 	■	■	■	■	■	■	■	20 1533 88 00 07
27. Double pipe clamp fits a 2x ø 4.75 pipe or hose 	■	■	■	■	■	■	■	156 31 020

■ can be used without restrictions
~ with restrictions

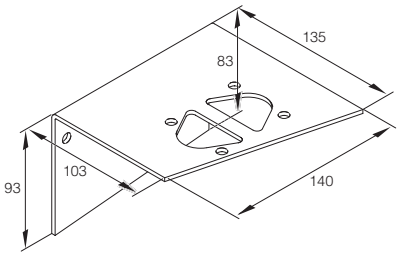
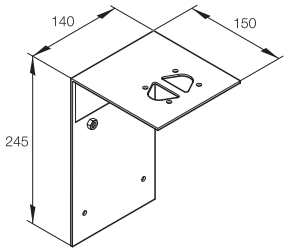
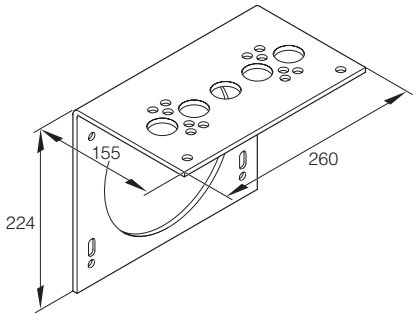
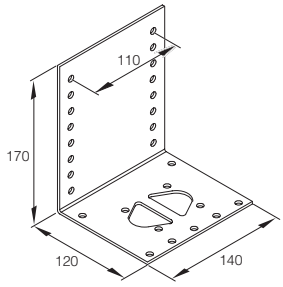
		Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
28. Hose bracket, rotatabler Fits pipe or hose ø 4–4,5 mm, ø 11–13 mm		■	■	■	■	■	■	■	156 31 023
29. Captive nut									
	M6	■	■	■	■	■	■	■	119 02 002
	M8	■	■	■	■	■	■	■	119 10 038
30. Edge protection, running meter, fits panel thickness 1.5 mm		■	■	■	■	■	■	■	394 00 055

■ can be used without restrictions
~ with restrictions

Fasteners

		Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
31. Spacer plate Rubber									
	6 mm thick	■	■						25 1482 89 00 02
32. Flange gasket Silicone									
	3 mm thick	■	■						20 1577 89 00 02
33. Reinforcement plate									
	2 mm thick	■	■						20 1577 89 00 03
34. Perforated tape									
		■	■	■	■	■	■	■	20 1819 80 05 01

■ can be used without restrictions
~ with restrictions

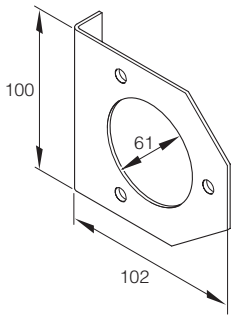
	Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
35. Heater bracket holder								
								
97°	■	■						20 1575 89 00 10
Stainless steel 105°	■	■						22 1050 89 08 00
36. Heater bracket holder								
								
	■	■						25 1482 89 01 00
37. Heater bracket holder								
								
			■					24 0076 00 00 01
38. Angle bracket for the heater								
								
	■	■						25 1482 89 00 11

■ can be used without restrictions
~ with restrictions

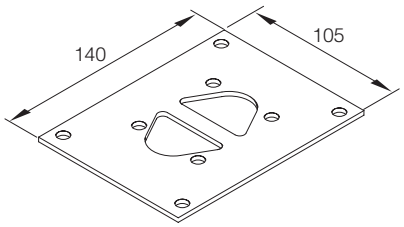
Fasteners

39. Bracket
For vent, plastic,

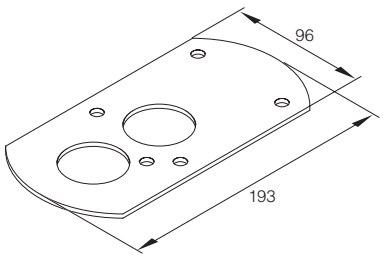
Can be combined with
item 4 page 55



40. Mounting plate



41. Reinforcement plate



Airtronic D2	Airtronic D3/D4/D4Plus	Airtronic D5	D 8LC	Hydronic 5	Hydronic M 8-12	Hydronic 16 - 35	Order no.
■	~						25 1688 89 00 09
■	■						25 1482 89 00 13
		■					25 1729 89 00 03

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